

# UGC NET PAPER-1

## GENERAL APTITUDE

# Solved Paper November 2021

Time Allotted: 1 Hour

Maximum Marks: 100

### Important Instructions:

1. Each question carries 2 marks.
2. This paper consists of fifty (50) multiple-choice type of questions.
3. Each item has four alternative responses marked (a), (b), (c) and (d). You have to darken the oval as indicated below on the correct response against each item.  
**Example:** where (c) is the correct response.
4. Your responses to the items are to be indicated in the **Answer Sheet**.
5. **Use of any calculator or log table etc., is prohibited.**
6. **Negative Marking:** For each incorrect answer 0.5 marks shall be deducted.

### Direction for Questions (1 to 5):

Study the table carefully and answer the questions that follow:

In the following table, total Exports and Imports of 5 countries over 4 years (in ₹ Crore) is given. Study the table carefully and answer the given questions. (I-import, E-export)

Year Country	2017		2018		2019		2020	
	I	E	I	E	I	E	I	E
P	25	30	24	32	28	36	22	32
Q	28	26	26	31	29	37	26	34
R	24	32	28	25	32	36	28	34
S	22	28	18	28	16	21	23	32
T	26	31	16	33	12	23	21	28

1. Which year has the maximum export?  
(a) 2017 (b) 2018  
(c) 2019 (d) 2020
2. Which year has the minimum average import?  
(a) 2017 (b) 2018  
(c) 2019 (d) 2020
3. Which country has the maximum percentage of profit increase from 2019 to 2020?  
(Profit = Export – Import)  
(a) P (b) Q  
(c) R (d) S
4. Find out the ratio of export done by country S and T during 2017-2020.  
(a)  $\frac{109}{115}$  (b)  $\frac{111}{115}$

(c)  $\frac{108}{117}$  (d)  $\frac{107}{117}$

5. Find out the difference between the average export and average import for the country P.  
(a) 7.25 (b) 7.75  
(c) 8.25 (d) 8.50

Given below are two statements:

**Statement I:** Exploration is particularly useful when researchers lack a clear idea of the problems they will meet during the study.

**Statement II:** Through exploration, researchers develop concepts more clearly, establish priorities, develop operational definitions, and improve the final research design.

6. In light of the above statements, choose the correct answer from the options given below:  
(a) Both Statement I and Statement II are false  
(b) Both Statement I and Statement II are true  
(c) Statement I is false but Statement II is true  
(d) Statement I is true but Statement II is false
7. In order to transform the regulatory system of Higher Education, the NEP proposes to set up HECI (Higher Education Commission of India). Which of the following are verticals of HECI?  
A. NHERC B. NAS  
C. HEGC D. NCIVE  
E. NAC

Choose the correct answer from the options given below:

- (a) A, B and C only  
 (b) A, C and E only  
 (c) B, C and E only  
 (d) C, D and E only
8. The average of ten number is 7. If each number is multiplied by 11, then the average of the new set of numbers is:  
 (a) 72 (b) 77  
 (c) 78 (d) 82
9. How many terms are there in the series 168, 175, 182, \_\_\_\_\_, 266?  
 (a) 13 (b) 14  
 (c) 15 (d) 16
10. Survey research is based on which of the following?  
 (a) Constructivism (b) Hermeneutics  
 (c) Interpretivism (d) Positivism
11. Some of the types of hypothesis are as follows:  
 A. Descriptive B. Null  
 C. Confounding D. Intervening  
 E. Explanatory (Causal)  
 Choose the correct answer from the options given below:  
 (a) A, B and D only (b) A, B and E only  
 (c) A, B and C only (d) B, C and D only
12. The number of Sustainable Development Goals is:  
 (a) 13 (b) 15  
 (c) 17 (d) 19
13. Marshall McLuhan's name is associated with the assertion:  
 (a) A message is a message  
 (b) The medium is the message  
 (c) The message determines the medium accurately  
 (d) The message is the medium
14. Match List I with List II

List I Steps in Inference	List II Statements
A. Thesis (Pratijna)	I. Because of smoke
B. Reason (Hetu)	II. Wherever there is smoke, there is fire, as in the kitchen

C. Example (Udaharana)	III. The mountain has fire
D. Application (Upanaya)	IV. The mountain also has smoke accompanied by fire, like the kitchen

Choose the correct answer from the options given below:

- (a) A - II, B - I, C - III, D - IV  
 (b) A - III, B - I, C - II, D - IV  
 (c) A - III, B - II, C - I, D - IV  
 (d) A - III, B - IV, C - II, D - I
15. Given below are two statements regarding the Router:  
**Statement I:** It enables data packets to be routed between different networks.  
**Statement II:** It works in the Data Link Layer.  
 In light of the above statements, choose the correct answer from the options given below  
 (a) Both Statement I and Statement II are false  
 (b) Both Statement I and Statement II are true  
 (c) Statement I is false but Statement II is true  
 (d) Statement I is true but Statement II is false
16. \_\_\_\_\_ messages have more or less same meaning for the audience.  
 (a) Abstract (b) Complex  
 (c) Connotative (d) Denotative
17. Match List I with List II

List I I/O device	List II Data transfer rate
A. Disk	I. 50 bps
B. Mouse	II. 1 Mbps
C. Laser printer	III. 120 bps
D. Keyboard	IV. 100 Mbps

Choose the correct answer from the options given below:

- (a) A - I, B - II, C - III, D - IV  
 (b) A - II, B - I, C - III, D - IV  
 (c) A - IV, B - II, C - I, D - III  
 (d) A - IV, B - III, C - II, D - I
18. Identify the fallacy committed in the argument:  
 Some birds are not beautiful creatures.  
 All dogs are beautiful creatures.  
 Therefore, no dogs are birds.  
 (a) Fallacy of Exclusive Premises

- (b) Fallacy of the Illicit Process of Major Term  
 (c) Fallacy of the Illicit Process of Minor Term  
 (d) Fallacy of the Undistributed Middle Term
19. moodKIT platform uses \_\_\_\_\_, an open source content management system.  
 (a) DRUPAL (b) JOOMLA  
 (c) Moodle (d) SAKAI
20. The Post Office protocol is  
 (a) Protocol used for sending emails  
 (b) Protocol used for transfer of files from one computer to another computer  
 (c) Protocol used to handle email attachments  
 (d) Protocol used when receiving emails from the email server
21. United Nations Environmental Program (UNEP) was the result of deliberations held during  
 (a) Earth Summit at Rio de Janeiro in 1992/1992  
 (b) Human Environmental Conference at Stockholm in 1972/1972  
 (c) Kyoto Protocol 1997  
 (d) Montreal Protocol 1987
22. CBCS is  
 (a) Choice Based Credit System  
 (b) Credit Based Choice Scores  
 (c) Criteria Based Choice System  
 (d) Criteria Based Creditable Scores
23. If 'All men are mortal' is given as True, then which of the following options can be validly inferred from it?  
 A. 'No men is mortal' is False  
 B. 'Some men are mortal' is True  
 C. 'Some men are not mortal' is True  
 D. 'Some men are not mortal' is False  
 E. 'Some men are mortal' is False
- Choose the correct answer from the options given below:  
 (a) A, B and D only (b) A, B and C only  
 (c) A, B, C and D only (d) B, C, D and E only
24. INFLIBNET Centre, which is an autonomous Inter-University Centre of the University Grants Commission, maintains  
 (a) e-Gyankosh (b) e-Pathshala  
 (c) Shodhganga (d) Swayam Prabha
25. Which among the following are non-parametric statistics?  
 A. t-test  
 B. F-test  
 C. Spearman's rank order correlation  
 D. Mann-Whitney-Wilcoxon test  
 E. Kendall coefficient of concordance
- Choose the correct answer from the options given below:  
 (a) A, B and C only (b) B, C and D only  
 (c) B, D and E only (d) C, D and E only
26. Given below are two statements:  
**Statement I:** Truth and Falsehood are predicates of Arguments  
**Statement II:** Validity and Invalidity are predicates of Statements
- In light of the above statements, choose the most appropriate answer from the options given below:  
 (a) Both Statement I and Statement II are correct  
 (b) Both Statement I and Statement II are incorrect  
 (c) Statement I is correct but Statement II is incorrect  
 (d) Statement I is incorrect but Statement II is correct
27. Which region of brain is involved in our ability to learn new information, particularly if it is verbal?  
 (a) Cerebrum (b) Hippocampus  
 (c) Pons (d) Thalamus
28. Given below are two statements:  
**Statement I:** The compound interest on 280 for 18 months at 10% per annum is 44.3.  
**Statement II:** At 5.6% rate of simple interest, a certain sum will be doubled in 15 years
- In light of the above statements, choose the correct answer from the options given below  
 (a) Both Statement I and Statement II are false  
 (b) Both Statement I and Statement II are true  
 (c) Statement I is false but Statement II is true  
 (d) Statement I is true but Statement II is false
29. Given below are two statements:  
**Statement I:** According to Piaget, the ability to solve conservation problems depends on having an understanding of three basic aspects of reasoning: identity, compensation, and reversibility.  
**Statement II:** The stage of classification does not depend on a student's ability to focus on a single characteristic of objects in a set and group the objects according to that characteristic.

In light of the above statements, choose the most appropriate answer from the options given below:

- (a) Both Statement I and Statement II are correct  
 (b) Both Statement I and Statement II are incorrect  
 (c) Statement I is correct but Statement II is incorrect  
 (d) Statement I is incorrect but Statement II is correct
30. The number of characters in 8 bit ASCII code (American Standard Code for Information Interchange) is  
 (a) 128 (b) 256  
 (c) 512 (d) 64
31. Given below are two statements:  
**Statement I:** Small amount of atmospheric Nitrogen dioxide  $\text{NO}_2$  is produced from polluting sources  
**Statement II:** Most of the atmospheric  $\text{NO}_2$  is produced due to photochemical reactions in the atmosphere  
 In light of the above statements, choose the most appropriate answer from the options given below:  
 (a) Both Statement I and Statement II are correct  
 (b) Both Statement I and Statement II are incorrect  
 (c) Statement I is correct but Statement II is incorrect  
 (d) Statement I is incorrect but Statement II is correct
32. Given below are two statements:  
**Statement I:** Policy action and implementation plans require sound database systems at the regional level only.  
**Statement II:** The statistical system should ensure its impeccability with data architecture, security, quality, cleaning and integration.  
 In light of the above statements, choose the most appropriate answer from the options given below:  
 (a) Both Statement I and Statement II are correct  
 (b) Both Statement I and Statement II are incorrect  
 (c) Statement I is correct but Statement II is incorrect  
 (d) Statement I is incorrect but Statement II is correct
33. Which of the following fractions is the smallest?  
 (a)  $11/16$  (b)  $29/40$   
 (c)  $5/8$  (d)  $65/80$
34. Given below are two statements, one is labelled as Assertion A and the other is labelled as Reason R:  
**Assertion A:** According to Naiyayikas, the fallacy of Savyabhicara occurs when the middle term leads to different opposite conclusions.  
**Reason R:** When the middle term is irregular, it is distributively not related to the major term.  
 In light of the above statements, choose the correct answer from the options given below:  
 (a) A is false but R is true  
 (b) A is true but R is false  
 (c) Both A and R are true and R is the correct explanation of A/(A)  
 (d) Both A and R are true but R is NOT the correct explanation of A/(A)
35. A total of 324 coins of 20 paise and 25 paise make a sum of 71. The number of 20 paise coins is  
 (a) 124 (b) 125  
 (c) 144 (d) 200
36. Which of the following water borne diseases may be caused by virus, bacteria and protozoa?  
 (a) Cholera (b) Diarrhea  
 (c) Hepatitis (d) Typhoid
37. Given below are two statements, one is labelled as Assertion A and the other is labelled as Reason R:  
**Assertion A:** In classroom communication, teachers should acknowledge and take into account students' views.  
**Reason R:** In a classroom, the probability of message reception can be enhanced by establishing a viewpoint.  
 In light of the above statements, choose the correct answer from the options given below:  
 (a) A is false but R is true  
 (b) A is true but R is false  
 (c) Both A and R are true and R is the correct explanation of A/(A)  
 (d) Both A and R are true but R is NOT the correct explanation of A/(A)

38. According to Urie Bronfenbrenner's biological model of human development, microsystem constitutes \_\_\_\_\_.

- A. Immediate family    B. School  
C. Beliefs                      D. Customs  
E. Neighbourhood

Choose the correct answer from the options given below:

- (a) A, B and E only    (b) A, B and C only  
(c) A, C and E only    (d) C, D and E only

39. Which of the following state has maximum installed wind power as per MNRE's latest report?

- (a) Andhra Pradesh    (b) Karnataka  
(c) Maharashtra    (d) Tamil Nadu

40. The communication among persons working at different levels who have no direct reporting relationship is called:

- (a) Diagonal communication  
(b) Horizontal communication  
(c) Intrapersonal communication  
(d) Upward communication

41. Match List I with List II

List I	List II
A. Indian Institute of Advanced Study	I. Noida, UP
B. Indian Biological Sciences and Research Institute	II. Shimla, HP
C. Indian Institute of Soil Science	III. Bhopal, MP
D. Indian Institute of Sugarcane Research	IV. Lucknow, UP

Choose the correct answer from the options given below:

- (a) A - I, B - IV, C - II, D - III  
(b) A - II, B - I, C - III, D - IV  
(c) A - III, B - IV, C - II, D - I  
(d) A - IV, B - III, C - II, D - I

42. Following are some statements regarding File Transfer Protocol (FTP). Choose the correct statements

- A. It is used to access the world wide web (www)  
B. It is used to download data from file servers  
C. It is used for very small files

D. Files are transferred from one device to another

Choose the correct answer from the options given below:

- (a) A and B only    (b) A and C only  
(c) B and C only    (d) B and D only

43. Which one of the following is an important characteristic of the researchers involved in qualitative study?

- (a) Enthusiasm    (b) Non-partisan  
(c) Reflexivity    (d) Transparency

44. Global Citizenship Education promotes

- (a) Common international laws for global citizenship  
(b) International public relations  
(c) Issues pertaining to citizenship across countries involving VISA  
(d) More peaceful, tolerant, inclusive, secure and sustainable societies

45. Which one of the following is an example of a technological barrier in communication?

- (a) Complexity of ideas  
(b) Low bandwidth of internet  
(c) Personal attitude towards technology  
(d) Physical locations of communicators

**Direction for Questions (1 to 5):**

46. Read the passage carefully and answer the questions that follows:

Leadership studies are an emergent discipline, and the concept of leadership will continue to change. Leadership lore is defined as an influence relationship among leaders and followers who want real change and outcomes that reflect their shared purpose. Leadership involves influence. It occurs among people; those people who intentionally desire significant changes, and the changes reflect purpose shared by the leaders and their followers.

Influence means that the relationship among people is not passive; however, also part of this definition is that influence is multidirectional. It does not use orders or threats to make somebody do something. The basic cultural values in America make it easiest to think of leadership as something a leader does to a follower. However, leadership has an effect in both directions. In most organizations, superiors influence subordinates, but subordinates also

influence superiors. The people involved in the relationship want real and important changes- leadership involves creating change, not maintaining what normally happens. In addition, the changes sought are not dictated by leaders, but reflect purposes that leaders and followers share. Moreover, change is toward an outcome that the leaders and follower both want; a desired future or shared purpose that motivates them toward this more preferable outcome. An important aspect of leadership is influencing others to come together around a common vision. Thus, leadership involves the influence of people to bring about change toward a desirable future.

What should be the outcome of leadership actions?

- (a) Movement towards common vision of the leader and the followers
  - (b) Movement towards the vision of the leader
  - (c) Movement towards the vision of the majority
  - (d) Strengthening of the authority of leaders
47. "Leadership studies are an emerging discipline", means:
- (a) Leadership studies are a valid field of research
  - (b) Leadership studies are an established field
  - (c) Leadership studies is an elaborate field
  - (d) Leadership studies is an evolving domain of scholarship
48. The concept of leadership discussed in this passage is
- (a) Exceptional
  - (b) Horizontal
  - (c) Individualistic
  - (d) Verticle-topdown
49. What is the main theme of this passage?
- (a) Argument about leadership
  - (b) Explanation of leadership construct
  - (c) Models of leadership
  - (d) Pros and cons of leadership
50. What variables are used for defining leadership?
- (a) Power to affect relationship and desire for change in the true sense of the team
  - (b) Power to change and control
  - (c) Power to effect and desire for mandated change
  - (d) Power to get things done quickly by influence

□□□

## Answer Key

Q.No.	Answer	Topic's Name	Chapter's Name
1	d	Data Interpretation	Data Interpretation
2	b	Data Interpretation	Data Interpretation
3	d	Data Interpretation	Data Interpretation
4	a	Data Interpretation	Data Interpretation
5	b	Data Interpretation	Data Interpretation
6	b	True & False Statements	Logical Reasoning
7	b	HECI	Higher Education System of India
8	b	Number-based	Logical Reasoning
9	c	Numerical Series	Logical Reasoning
10	d	Survey	Teaching Aptitude
11	b	Hypothesis	Research Aptitude
12	c	SDGs	People & Environment
13	b	Assertion	Research Aptitude
14	b	Inference-Statement	Research Aptitude
15	d	True & False Statements	Logical Reasoning
16	c	Types of Messages	Teaching Aptitude
17	d	Input-output Devices	Information & Communication Technology
18	b	Syllogism	Logical Reasoning
19	a	Management Tools	Information & Communication Technology
20	d	Communication Protocols	Information & Communication Technology
21	b	UNEP	People & Environment
22	a	CBCS	Higher Education System of India
23	a	Inference-based	Logical Reasoning
24	c	INFLIBNET	Higher Education System of India
25	d	Statistics	Teaching Aptitude
26	b	True & False Statements	Logical Reasoning
27	a,b,c	Terminology	Higher Education System of India
28	a	True & False Statements	Logical Reasoning
29	c	True & False Statements	Logical Reasoning
30	b	ASCII Code	Information & Communication Technology
31	a	True & False Statements	Logical Reasoning
32	d	True & False Statements	Logical Reasoning
33	c	Number-based	Logical Reasoning
34	c	Assertion & Reason	Logical Reasoning
35	d	Algebra	Mathematics
36	b	Terminology	Higher Education System of India
37	c	Assertion & Reason	Logical Reasoning

38	a	Fill in the Blanks	Higher Education System of India
39	d	Wind Power	People & Environment
40	a	Type of Communication	Information & Communication Technology
41	a	National Institutes	Higher Education System of India
42	d	File Transfer Protocol	Information & Communication Technology
43	c	Quality of a Researcher	Research Aptitude
44	d	Global Education Citizenship	People & Environment
45	b	Technological Barriers	Information & Communication Technology
46	c	Inference-based	Comprehension
47	d	Fact-based	Comprehension
48	b	Fact-based	Comprehension
49	b	Main theme	Comprehension
50	a	Fact-based	Comprehension



**ANSWERS WITH EXPLANATIONS****1. Option (d) is correct.**

Export of 2017 =  $30 + 26 + 32 + 28 + 31 = 147$

Export of 2018 =  $32 + 31 + 25 + 28 + 33 = 149$

Export of 2019 =  $36 + 37 + 36 + 21 + 23 = 153$

Export of 2020 =  $32 + 34 + 34 + 32 + 28 = 160$   
(maximum)

**2. Option (b) is correct.**

Average imports of:

2017;  $(25 + 28 + 24 + 22 + 26)/5 = 125/5 = 25$

2018;  $(24 + 26 + 28 + 18 + 16)/5 = 112/5 = 22.4$   
(Minimum)

2019;  $(28 + 29 + 32 + 16 + 12)/5 = 117/5 = 23.4$

2020;  $(22 + 26 + 28 + 23 + 21)/5 = 120/5 = 40$

**3. Option (d) is correct.**

Country	2019 Export	2019 Import	2019 Profit	2020 Export	2020 Import	2020 Profit	Change in profit 2019-2020	% Change in profit
P	36	28	8	32	22	10	2	$2 \times 100/8 = 25\%$
Q	37	29	8	34	26	8	0	0
R	36	32	4	34	28	6	2	$2 \times 100/4 = 50\%$
S	21	16	5	32	30	2	3	$3 \times 100/5 = 60\%$ (max)

**4. Option (a) is correct.**

Export done by country S =  $28 + 28 + 21 + 32 = 109$

Exports done by country T =  $31 + 33 + 23 + 28 = 115$

Ratio =  $109/115$  or  $109:115$

**5. Option (b) is correct.**

Average export of country P =  $30 + 32 + 36 + 32/4 = 130/4 = 32.5$

Average import of country P =  $25 + 24 + 28 + 22/4 = 99/4 = 24.75$

Difference of average import and average export =  $32.5 - 24.75 = 7.75$

**6. Option (b) is correct.**

Both statements are true. Exploratory research or exploration is done almost before every research to get a clear idea of the research problem. Exploratory research refers when a research is done to explore a less known field. Hence, both statements are true.

**7. Option (b) is correct.**

The Higher Education Commission of India is a result of the New Education Policy of 2020. It is a regulatory body with four verticals. Those are:

1. NHERC or National Higher Education Regulatory Council
2. GEC or General Education Council
3. HEGC or Higher Education Grant Council
4. NAC or National Accreditation Council

**8. Option (b) is correct.**

Average or mean is affected by change in scale, which means if every number, of which average has been calculated, is multiplied or divided by a same number, average also gets affected by the same.

If every number of series is multiplied by 7, then the average also will be 7 times. Average = 7. New average after multiplying every number with 11 =  $7 \times 11 = 77$ .

9. **Option (c) is correct.**  
 Difference between every number is of 7  
 Starting from 168 and ending at 266  
 Difference of lowers and largest term  
 $= 266 - 168 = 98$   $98/7 = 14$   
 Number of terms in series  $= 14 + 1 = 15$   
 1 is to be added as while calculating difference the first term is neglected and we have to consider every term of the series.
10. **Option (d) is correct.**  
 Survey research is based on the Positivism approach. Positivism approach believes that everything has a logic that can be known by observation, surveys and so on.
11. **Option (b) is correct.**  
 Null, alternative and descriptive are the types of research whereas confounding and intervening are the types of variables.
12. **Option (c) is correct.**  
 In 2015, 17 Sustainable Development Goals or SDGs were designed and launched to achieve a more sustainable environment for all by replacing MDGs Or Millennium Development Goals.
13. **Option (b) is correct.**  
 The medium is the message. This statement is given by Marshall McLuhan.
14. **Option (b) is correct.**  
 Pratijan or thesis is the statement which is thought to be presented. Here, The mountain has fire.  
 Hetu or Reason is on which the thesis statement is based. Here, because of smoke (the mountain has fire because of smoke).  
 Udharana or example is the statement which is given to support the thesis. Here, wherever there is smoke, there is fire, as in the kitchen.  
 Application or Upanaya is the comparison of reason and main statement. Here, the mountain also has fire accompanied by smoke like the kitchen.
15. **Option (d) is correct.**  
 Router enables data packets to be routed between various networks but it does not work in the data link layer.
16. **Option (c) is correct.**  
 Connotative words or communication or message refers to words having second meaning than it commonly seeks to. For example; blue commonly means a color but in literature it denotes the feeling of sadness. She is feeling blue today. These types of messages convey a less understanding to the audience unless they have a vast knowledge of literature and second meanings of the word.
17. **Option (d) is correct.**  
 Data transfer rate of input and output devices are as follows:  
 Disk-100 mbps  
 Mouse-120 mbps  
 Laser printer-1 mbps.
18. **Option (b) is correct.**  
 Fallacy of the illicit of major term. Fallacy of illicit of major term is when the major term is distributed in premise but not in conclusion. In simple words, when there is no valid reason that exists or an unmatched conclusion is given, this fallacy or error is called the fallacy of an illicit or major term.
19. **Option (a) is correct.**  
 DRUPAL is an open source Content Management System (CMS) which helps individuals and organizations to build and maintain their websites.
20. **Option (d) is correct.**  
 Post Office Protocol or POP is a protocol that is used while receiving emails from a server.  
 Protocol used for sending emails and managing email attachment is SMTP or Simple Mail Transfer Protocol. Protocol used for transferring files from one computer to another is FTP or File Transfer Protocol.
21. **Option (b) is correct.**  
 Conference in Stockholm was held in 1972 with the goal of environmental health. The United Nations Environmental Programme or UNEP was introduced and launched in this conference.
22. **Option (a) is correct.**  
 Choice Based Credit System. CBCS or Choice Based Credit System is a system in which students are offered to select the subjects and

field of their choice. It includes the following characteristics:

1. Choice among various courses and subjects.
2. Grading system
3. Modern education system
4. Semester system
5. Various aspects for calculating credits
6. Includes various subjects in core, elective subjects, skills etc.

**23. Option (a) is correct.**

If statement "All men are mortal" than following arguments are valid:

- A. No man is mortal is false
- B. Some men are mortal is true
- D. Some men are not mortal is false

Tips for exam: for understanding this type of question, take an example if you have ₹ 100. Then you can spend ₹ 50 also. Likewise, if all men are mortal then some men are mortal is also true.

**24. Option (c) is correct.**

Shodhganga and shodhgangotri are the centers and an initiative taken by UGC or Universities Grant Commission. Thesis of various scholars of all universities are uploaded at Shodhganga and accepted synopsis are uploaded on shodhgangotri.

**25. Option (d) is correct.**

C, D and E are non-parametric tests whereas F-test and t-test are parametric tests.

**26. Option (b) is correct.**

Both statements are incorrect. Statements are written in opposite characteristics. Validity and invalidity are predicates of argument whereas truth and falsehood are predicates of statement.

**27. Option (a,b,c) is correct.**

Three answers were given by NTA of this question as all these three parts of the brain are included in learning new information.

**28. Option (a) is correct.**

Both statements are false. Interest for principal 280 at the rate of 10% for 18 months:

(As calculating compound interest is quite complicated because of various aspects we can calculate it as follows:)

$$280 \times 10\% = 28$$

Amount after 1 year = 308 Interest for more 6 months  $308 \times 10 \times 6 / (100 \times 12) = 15.4$

Total interest after 18 months = 28 + 15.4 = 43.4

Thus, statement 1 is incorrect

For statement 2,

Let the principal 100

Interest for 15 years with 5.6%

$$100 \times 15 \times 5.6 / 100 = 84$$

Amount after 15 years = 100 + 84 = 184 (not doubled)

Thus, statement 2 is also incorrect.

**29. Option (c) is correct.**

According to Piaget's theory of cognitive development, the ability of every person to solve problems is based on three aspects those are-identification, comparison and reversibility. The stage of classification is based on ability to focus on every single aspect of the problem.

**30. Option (b) is correct.**

UNI code, UTF8 and ASCII are the major technologies used in computers. Character in the 8 bit ASCII code is 256.

**31. Option (a) is correct.**

Small amount of atmospheric Nitrogen dioxide is produced from polluting sources and a major amount is produced naturally due to photochemical reactions in the atmosphere.

**32. Option (d) is correct.**

Policy action and implementation require a sound database not only on the regional level but at every level. Thus, statement 1 is incorrect. Statistical strength must be required for this. Thus, statement 2 is correct.

**33. Option (c) is correct.**

For comparison, denominator should be equal

$$\frac{11}{16} = \frac{55}{80}$$

$$\frac{29}{40} = \frac{58}{80}$$

$$\frac{5}{8} = \frac{50}{80}$$

$$\frac{65}{80} = \frac{65}{80}$$

$$\text{Smallest fraction} = \frac{50}{80} = \frac{5}{8}$$

**34. Option (c) is correct.**

According to Naiyayikas, the fallacy of vyabhichara occurring in the middle term is irregular and leads to a different or opposite conclusion.

**35. Option (d) is correct.**

Let the number of coins of 25 paise =  $X$

Then, the number of coins of

$$20 \text{ paise} = 324 - X$$

$$\text{So, } 0.25 \times X + 0.20(324 - X) = 71$$

$$\Rightarrow 0.25X + 64.80 - 0.20X = 71$$

$$\Rightarrow 0.25X - 0.20X + 64.80 = 71$$

By multiplying both sides with 100

$$\text{Then, } 5X + 6480 = 7100$$

$$\Rightarrow 5X = 7100 - 6480$$

$$\Rightarrow 5X = 620$$

$$\Rightarrow X = 620/5 = 124$$

$X$  = Number of coins of 25 paise = 124

$$\begin{aligned} \text{Number of coins of 20 paise} &= 324 - X \\ &= 324 - 124 = 200 \end{aligned}$$

**36. Option (b) is correct.**

Diarrhoea is a waterborne disease which may be caused by viruses, bacteria and protozoa.

**37. Option (c) is correct.**

A teacher should acknowledge and accept the point of views of students because this helps to enhance the environment of the classroom and it becomes very interactive and helps in permanent learning.

**38. Option (a) is correct.**

According to Urie Bronfenbrenner's biological model of human development, in the development of a human being, the microsystem is constituted by family, neighborhood and school.

**39. Option (d) is correct.**

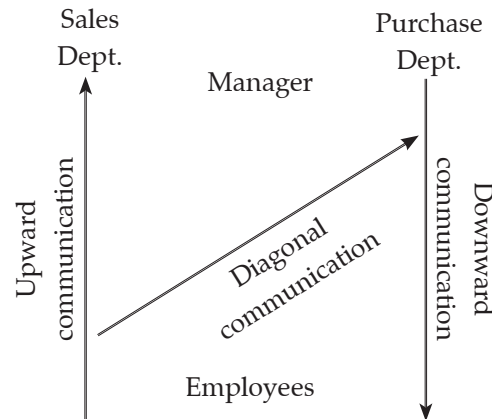
According to a recent report of MNREs or Ministry of New and Renewable Energies, Tamil Nadu has the maximum installed wind power with capacity of 9.3 GW wind energy which consists 25% of total installed wind energy of India.

**40. Option (a) is correct.**

When communication flows or is between different levels and different departments of an organization, it is called diagonal communication.

Upward and downward communication are types of vertical communication which happens between people working in the same department at different levels.

Horizontal communication is the communication between people working on the same level in different departments.

**41. Option (a) is correct.**

Indian Institute of Advanced Study (IIAS) - Shimla, Himachal Pradesh

Indian Biological Sciences and Research Institute - Noida, Uttar Pradesh

Indian Institute of Soil Science (IISS) - Bhopal, Madhya Pradesh

Indian Institute of Sugarcane Research - Lucknow, Uttar Pradesh

**42. Option (d) is correct.**

FTP or File Transfer Protocol is the protocol used for transferring files from one to another computer and downloading files from the server. It is used for small as well as large files.

**43. Option (c) is correct.**

Qualitative research is a research which is majorly dependent on beliefs of the researcher. Being reflexive is the most important quality of a researcher involved in qualitative research.

**44. Option (d) is correct.**

More peaceful, tolerant, inclusive, secure and sustainable societies.

Global Citizenship Education objects to peace all over the world. It promotes peace, secure and sustainable development.

**45. Option (b) is correct.**

Low Bandwidth of internet. Low bandwidth of the internet is a technical barrier.

Physical location is a physical barrier.

Personal attitude toward technology is a personal barrier. Complexity of ideas is a personal barrier.

**46. Option (c) is correct.**

The outcomes of leadership and the main motive of leadership is to motivate the followers to work as a team.

Leaders try to generalize the goals of the organization and the followers.

**47. Option (d) is correct.**

Leadership studies is an evolving domain of scholarship.

**48. Option (b) is correct.**

Horizontal leadership is a form of leadership which is closely associated with participatory and democratic leadership. In this form leaders work as a mentor and motivator. They invite the point of views of the subordinates and motivate them to work as a team.

**49. Option (b) is correct.**

The main theme of the passage is fully dependent on a good leadership power.

**50. Option (a) is correct.**

According to the passage, leadership should work to develop team spirit and it should have the power to affect relationships and desire of followers to work for the team.

□□□

# UGC NET PAPER-1

## GENERAL APTITUDE

# Solved Paper November 2020

Time Allotted: 1 Hour

Maximum Marks: 100

### Important Instructions:

1. Each question carries 2 marks.
2. This paper consists of fifty (50) multiple-choice type of questions.
3. Each item has four alternative responses marked (a), (b), (c) and (d). You have to darken the oval as indicated below on the correct response against each item.  
**Example:** where (c) is the correct response.
4. Your responses to the items are to be indicated in the **Answer Sheet**.
5. **Use of any calculator or log table etc., is prohibited.**
6. **Negative Marking: For each incorrect answer 0.5 marks shall be deducted.**

1. The modality of 'teaching' has to be differentiated from 'training' or 'instructing' in terms of which of the following learning outcomes?  
(a) Disciplined an patterned behaviour  
(b) Critical and creative thinking  
(c) Firm and durable association of ideas  
(d) Quick feedback
  2. Which of the given learner characteristics are associated with field dependent (holistic/visual) learning style?  
(i) Focusing on facts and principles  
(ii) Relating concepts to personal experience  
(iii) Formal interaction with teacher related to tasks at hand  
(iv) Preferring to compete rather than cooperate  
(v) Preferring to cooperate rather than compete  
(vi) Perceiving global aspects of concepts and materials  
Choose the correct answer from the options given below:  
(a) (i), (ii) and (iii)      (b) (ii), (iii) and (v)  
(c) (ii), (v) and (vi)      (d) (iv), (v) and (vi)
  3. Which of the following potential factors affecting teaching are related to instructional facilities and learning environment?  
(i) Praise and encouragement by teachers  
(ii) Non availability of textbooks/reading materials for use  
(iii) Proactive moves in the interactive processes  
(iv) Shortage of highly qualified teachers  
(v) Availability of smart classes
- Choose the correct answer from the following options:
- (a) (i), (ii) and (iii)      (b) (ii), (iii) and (v)  
(c) (i), (iv) and (v)      (d) (iii), (iv) and (v)
4. When the 'test data' tell us about a student's level of proficiency in a defined area, the procedure of evaluation is called  
(a) Formative evaluation  
(b) Summative evaluation  
(c) Norm-referenced testing  
(d) Criterion-referenced testing
  5. Which of the following is indicative of innovations in the evaluation system at present?  
(a) Semesterization system  
(b) Project based evaluation system  
(c) Choice based credit system  
(d) Objective based evaluation system
  6. Identify the qualitative research designs from the list given below:  
(i) Exploring common experiences of individuals to develop a theory  
(ii) Controlling, manipulating, observing and measuring the effect  
(iii) Exploring the shared culture of a group of people  
(iv) Exploring individual stories to describe the lives of people  
(v) Extending generalizations from sample to population
- Select the correct answer from the following options:
- (a) (i), (iii) and (iv)      (b) (i), (ii) and (iii)  
(c) (ii), (iii) and (v)      (d) (ii), (iv) and (v)

7. Which of the following shows the correct sequence in undertaking Action Research based studies?
- Planning, Acting on the plan, Observing and Reflecting
  - Acting on the plan, Observing, Planning and Reflecting
  - Reflecting, Planning, Acting on the plan and Observing
  - Acting on the plan, Reflecting, Planning and Observing
8. Application of ICT in research is relevant in which of the following stages?
- Survey of related studies
  - Data collection in the field
  - Data Analysis
  - Writing the thesis
  - Indexing the references
- Choose the most appropriate option from those given below:
- (ii), (iv) and (v)
  - (i), (iii) and (v)
  - (i), (ii) and (iv)
  - (ii), (iii) and (iv)
9. Match List I with List II

List I (Key Terms used in Research)	List II (Description of Terms)
(1) Hypothesis	(i) Techniques used for collection of facts and information
(2) Sample	(ii) Devices for arriving at conclusions
(3) Research Design	(iii) A tentative statement indicating potential solution of the problem of study
(4) Research Tool	(iv) A subset drawn from a defined set
	(v) Conceptual framework for conducting research

Select the correct answer from the options given below:

- (1)-(i), (2)-(ii), (3)-(iii), (4)-(iv)
  - (1)-(ii), (2)-(iii), (3)-(iv), (4)-(v)
  - (1)-(i), (2)-(ii), (3)-(iv), (4)-(iii)
  - (1)-(iii), (2)-(iv), (3)-(v), (4)-(i)
10. A researcher reports his/her research finding to the research audience in such a way that his/her personal views are necessarily getting

supported. This would involve issues relating to

- Technical aberration
  - Research ethicist
  - Scientific rigour
  - Personal predilection
11. Given below are two statements, one is labelled Assertion (A) and the other is labelled Reason (R)
- Assertion (A):** Depending upon the classroom situation, some media of communication are more effective than others.
- Reason (R):** Selection of a medium is directly related to the nature of the message for students

In the light of the above, choose the correct answer from the options given below:

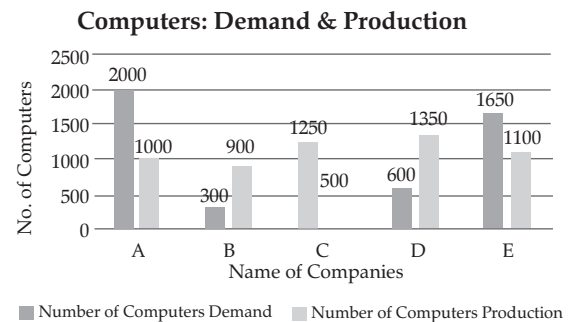
- Both (A) and (R) are true and (R) is the correct explanation of (A)
  - Both (A) and (R) are true but (R) is not the correct explanation of (A)
  - (A) is true but (R) is false
  - (A) is false, but (R) is true
12. Communication skills of students can be improved by
- Asking general questions
  - Exposure to new technology
  - Fostering critical thinking
  - Discriminants use of vocabulary
  - Limited listening
- Choose the most appropriate answer from the options given below:
- 1, 2 and 3
  - 2, 3 and 4
  - 3, 4 and 5
  - 1, 4 and 5
13. Structured classroom communication can be categorized as

- Interpersonal communication
  - Vertical communication
  - Group communication
  - Cross-purpose communication
14. For effective communication inside a classroom, a teacher should embark upon
- Ideological leanings
  - Innuendos
  - Issuing attention commands
  - Listener analysis

15. The concept of entropy as used in communication is related to  
 (a) Virtual reality  
 (b) Market place  
 (c) Order  
 (d) Communicative language
16. The next number in the given series is 196, 384, 736, \_\_\_\_\_  
 (a) 1344 (b) 1244  
 (c) 1434 (d) 1544
17. Find the missing letters in the series: BCA, YZX, FED, \_\_\_\_\_, HIG  
 (a) UVW (b) VWU  
 (c) WVU (d) VUW
18. Vinod's mother-in-law is the mother of Amit's mother-in-law. How is Vinod related to Amit?  
 (a) Vinod is brother of Amit  
 (b) Vinod is father of Amit  
 (c) Vinod is uncle of Amit  
 (d) Vinod is father-in-law of Amit
19. In a certain code, FISH is written as EHRG. The code for JUNGLE will be  
 (a) ITNFKD (b) KVOHMF  
 (c) ITMFKD (d) TIMFKD
20. 63% of employees in a company are female. If the number of male employees is 111, then the total number of employees is  
 (a) 270 (b) 290  
 (c) 300 (d) 310
21. "Everyone believes that there is a soul. Therefore, you should also believe it." This inference commits which kind of fallacy?  
 (a) Ad hominem  
 (b) Ad populum  
 (c) Fallacy of Accident  
 (d) Fallacy of Ambiguity
22. "God is great because He does great things." This inference commits which kind of fallacy?  
 (a) Ad populum  
 (b) Fallacy of Composition  
 (c) Fallacy of Division  
 (d) Petitio Principii
23. Anil's participation in the classroom is indifferent. His parents do not find him to be active either. But his performance in examinations ranges from being good to outstanding. Therefore, he must be studying privately, in a clandestine way. This is an example of which kind of Pramana?  
 (a) Upamana (Comparison)  
 (b) Anumana (Inference)  
 (c) Anupalabdhi (Non-apprehension)  
 (d) Arthapatti (Implication)
24. The distinction between puravat and sesavat is made with reference to which of the following pramanas?  
 (a) Anumana (Inference)  
 (b) Pratyaksa (Perception)  
 (c) Comparison (Upamana)  
 (d) Abhava (Absence)
25. Which sentence cannot fit into the AEIO framework?  
 (a) No salt has iodine  
 (b) The salt on the table has iodine  
 (c) All salt has iodine  
 (d) Some salt has iodine

**Direction for questions 26 to 30:**

Data in respect of Demand and Production of Computers of five companies, A-E are shown in the figure. Based on the data, answer questions that follow:



26. The ratio of the number of companies having more production than demand to that of companies having more demand than production is  
 (a) 3:2 (b) 1:4  
 (c) 1:1 (d) 2:3
27. Which company has a minimum demand to production ratio?  
 (a) B (b) C  
 (c) D (d) E
28. The difference between average demand and average production of computers of all companies combined together is  
 (a) 950 (b) 190  
 (c) 180 (d) 850
29. The demand for computers is less than the production of computers in how many companies?  
 (a) 4 (b) 3  
 (c) 1 (d) 2



30. The demand of computers of Company D is more than that of the demand of the computers of Company B by  
 (a) 1.5 times (b) 2 times  
 (c) 2.5 times (d) 3 times
31. The term Plotter is best described as:  
 (a) An input device to produce good quality graphics  
 (b) An output device to produce drawings and graphics  
 (c) A fast storage device for storing good quality graphics  
 (d) A multipurpose device for taking inputs as well as outputs
32. Which of the following is correct with respect to the size of the storage units?  
 (a) Terabyte < Petabyte < Exabyte < Zettabyte  
 (b) Petabyte < Exabyte < Zettabyte < Terabyte  
 (c) Exabyte < Zettabyte < Terabyte < Petabyte  
 (d) Zettabyte < Exabyte < Petabyte < Terabyte
33. E-commerce involves buying and selling of:  
 (a) International goods  
 (b) Electronic goods  
 (c) Products related to computers  
 (d) Products and services over the Internet
34. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R):  
**Assertion (A):** An Intranet is a private network for sharing computing resources and information within an organization  
**Reason (R):** Intranet is private version of the Internet  
 In the light of the above two statements, choose the correct answer from the options given below:  
 (a) Both (A) and (R) are true and (R) is the correct explanation of (A)  
 (b) Both (A) and (R) are true but (R) is not the correct explanation of (A)  
 (c) (A) is true, but (R) is false  
 (d) (A) is false, but (R) is true
35. Which of the following devices allows a user to copy an external document and save it in electronic form onto a computer?  
 (a) Spammer (b) Scanner  
 (c) Printer (d) Plotter
36. From the following list, identify the sources of solid waste:  
 (i) Residential areas  
 (ii) Oceans  
 (iii) Institutional areas  
 (iv) Agriculture  
 (v) Dust storms  
 Select the correct answer from the options given below:  
 (a) (i), (ii) and (iii) (b) (ii), (iii) and (iv)  
 (c) (iii), (iv) and (v) (d) (i), (iii) and (iv)
37. Identify the sources of soil pollution from the following list:  
 (i) Industrial effluents  
 (ii) Eutrophication  
 (iii) Unscientific disposal of nuclear waste  
 (iv) Off-shore oil drilling  
 (v) Improper management of septic systems  
 Choose the correct answer from the options given below:  
 (a) (i), (ii) and (iii) (b) (ii), (iii) and (iv)  
 (c) (i), (iii) and (v) (d) (ii), (iv) and (v)
38. Which of the following statements represents mangrove characteristics as a safety hedge?  
 (a) The mangrove trees are tall with dense canopies  
 (b) The mangrove trees provide both food and medicines  
 (c) The mangrove swamps separate the human settlement from the sea  
 (d) The mangrove trees protect vulnerable coastlines as they hold soil together
39. Which of the following statements about the Volatile Organic Compounds (VOCs) are correct?  
 (i) They cause acid rain  
 (ii) They may cause cancer  
 (iii) They play an important role in the formation of photochemical smog  
 Select the correct answer from the options given below:  
 (a) (i) and (ii) (b) (ii) and (iii)  
 (c) (i) and (iii) (d) (i), (ii), and (iii)
40. Which of the following was the central aim of the Paris Agreement?  
 (a) To reduce the CFCs emissions  
 (b) To strengthen the global response to the threat of climate change

- (c) To address biological diversity issues
- (d) To address the problem of ozone layer depletion

41. The ancient Indian University famous for specialized study in 'Hinayana' was
- (a) Nadia University
  - (b) Nalanda University
  - (c) Vallabhi University
  - (d) Vikramshila University
42. Identify the non-conventional learning programmes:
- (i) Gerontology
  - (ii) Psychology
  - (iii) Ethical hacking
  - (iv) Anthropology
  - (v) Pet Groomers

Choose the correct answer from the options given below:

- (a) (i), (ii) and (iii)      (b) (ii), (iii) and (iv)
- (c) (iii), (iv) and (v)      (d) (i), (iii) and (v)

43. Identify Key result areas of the Skill Acquisition and Knowledge Awareness for Livelihood Promotion (SANKALP) project:
- (i) Institutional strengthening
  - (ii) Promotion of handicraft and carpet sector skills
  - (iii) Quality Assurance
  - (iv) Inclusion
  - (v) Overseas Employment through an agency
  - (vi) Expanding skills through Public Private Partnership (PPs)

Choose the correct answer from the options given below:

- (a) (i), (ii), (iii) and (iv)
- (b) (i), (iii), (iv) and (v)
- (c) (ii), (iv), (v) and (vi)
- (d) (i), (iii), (iv) and (vi)

44. Identify reform related areas of governance listed by the NITI Aayog in the Three Year Action Agenda (2017-18 to 2019-20) exclusively:
- (i) Environmental
  - (ii) Civil Services
  - (iii) Electoral
  - (iv) Corruption related
  - (v) Information and Communication Technology

Choose the correct answer from the options given below:

- (a) (i), (ii) and (iii)      (b) (ii), (iii) and (iv)
- (c) (iii), (iv) and (v)      (d) (i), (iv) and (v)

45. In the context of value education, which of the following stages will be considered a relatively advanced stage?
- (a) Value collection through imitation
  - (b) Value assessment through inner evaluation
  - (c) Value clarification through exposure
  - (d) Value consolidation through integration

**Direction for questions 46 to 50:**

Read the following passage carefully and answer the questions that follow.

Two paradoxes inform and problematize every discursive and practical employment of "human rights". The first is substantive and directly political: it concerns the relation between "the human" and "the political", and belongs to the domain of political ethics in general. The other is more nearly epistemological and moral: it addresses the issue of how one understands and practises the relationship between idea and actuality, or moral universality and cultural relativity. Each stems from the fact that human rights would cobble together two kinds of concepts and practical relations that are not innately friendly and treat them as one, ignoring the inherent absence of complementarity in their relationship. Thus, the discourse of human rights synthesizes and occludes paradoxical features of the origins, history, and character of human rights as an idea and a practice, making it far from self-evident as a conceptual "thing" or guide to moral and political practice. Paradox has always marked the invocation of human rights. Since their discursive inception, the initial paradoxes have not been solved so much as layered by new iterations of them - namely, that initiated in the UDHR (Universal Declaration of Human Rights), which identifies governments as the promissories for enforcement of human rights. Joining the paradoxes is an overarching feature that articulates human rights as a trans-political phenomenon besides being a political phenomenon designed to uplift all human societies.

46. The first important area of human rights paradox is concerned with
- (a) Problematization
  - (b) Discursive employment
  - (c) Human practice
  - (d) Political ethics

47. The epistemological paradox of human rights refers to the understanding of
- (a) Human aspects of rights
  - (b) Moral degradation
  - (c) Cultural dimension of human rights
  - (d) Political relations
48. What is ignored in comprehending two paradoxes of human rights?
- (a) Innate friendliness of paradoxes
  - (b) Absence of complementarity
  - (c) Relationship between idea and actuality
  - (d) Morality issues
49. What is missing in the discourse of human rights?
- (a) Self evidence as a concept
  - (b) Paradoxical features
  - (c) Exclusion of human rights features
  - (d) Synthesis of concept and practice
50. What is added to the existing paradoxes of human rights?
- (a) Iteration of UDHR
  - (b) Universality of human rights
  - (c) Invocation of human rights
  - (d) Political phenomenon across borders

□□□

## Answer Key

Q.No.	Answer	Topic's Name	Chapter's Name
1	b	Teaching	Teaching aptitude
2	c	Learner characteristics	Teaching aptitude
3	b	Factors affecting teaching	Teaching aptitude
4	b	Evaluation system	Teaching aptitude
5	b	Evaluation system	Teaching aptitude
6	a	Methods of research	Research aptitude
7	a	Methods of research	Research aptitude
8	b	Application of ICT in research	Research aptitude
9	d	Terminology related to research	Research aptitude
10	d	Research ethics	Research aptitude
11	a	Communication	Communication
12	b	Effective communication	Communication
13	c	Classroom communication	Communication
14	d	Classroom communication	Communication
15	c	Barriers to effective communication	Communication
16	a	Number series	Mathematical reasoning and aptitude
17	b	Alphabet series	Logical reasoning
18	d	Relationships	Logical reasoning
19	c	Codes	Logical reasoning
20	c	Proportion and percentage	Mathematical reasoning and aptitude
21	b	Formal and informal fallacies	Logical reasoning
22	d	Formal and informal fallacies	Logical reasoning
23	b	Pramanas	Logical reasoning
24	b	Pramanas	Logical reasoning
25	b	Research	Research aptitude
26	d	Data interpretation	Data interpretation
27	a	Data interpretation	Data interpretation
28	b	Data interpretation	Data interpretation
29	d	Data interpretation	Data interpretation
30	b	Data interpretation	Data interpretation
31	b	Terminology	Information and communication technology
32	a	Terminology	Information and communication technology
33	d	Terminology	Information and communication technology
34	b	Intranet	Information and communication technology
35	b	Terminology	Information and communication technology
36	d	Anthropogenic activities	People, development and environment

37	c	Soil pollution	People, development and environment
38	d	Natural hazards	People, development and environment
39	b	Air pollution	People, development and environment
40	b	Paris Agreement	People, development and environment
41	c	Institute of higher education in ancient India	Higher education system
42	d	Non-conventional learning programmes	Higher education system
43	d	Higher education policies	Higher education system
44	b	Higher education governance	Higher education system
45	d	Value education	Higher education system
46	d	Fact based	Comprehension
47	c	Inferential based	Comprehension
48	b	Inferential based	Comprehension
49	a	Inferential based	Comprehension
50	d	Fact based	Comprehension

**ANSWERS WITH EXPLANATIONS**

1. **Option (b) is correct.**  
Training includes high level of creativity and critical thinking while instruction do not include creativity and critical innovative thinking of student.
2. **Option (c) is correct.**  
Field dependent learners perform better in teams and are good at interpersonal relationships. So, they believe in cooperation and past experiences more. These people are best at learning from social experiences and surroundings.
3. **Option (b) is correct.**  
Instructional facilities will involve classrooms, books, computers, etc. Learning environment includes a safe environment, helpful rules and good morals.
4. **Option (b) is correct.**  
Summative evaluation is developed for identifying whether the goals of learning of any particular module are achieved or not. This evaluation helps in identifying if a learner can be promoted to the higher level.
5. **Option (b) is correct.**  
Project-based evaluation is a new alternative for the theoretical evaluation system which enhances the ability of students to implement the course learnings in an innovative manner. This helps in exploration of the topic further and developing an insight.
6. **Option (a) is correct.**  
Qualitative research design involves analysing and interpreting non numerical data such as behaviour pattern, belief system and morals, cultural differentiations, etc.
7. **Option (a) is correct.**  
Action research is a continuous research process to find solution of immediate real life problem which has four stages, namely- plan, act, observe and reflect. It is a cyclic process which keeps on moving until the results are obtained.
8. **Option (b) is correct.**  
ICT or information and communication technology helps in getting access to the information and secondary data which is used for research. Even Information technology is used for analysing the collected data for interpretation.
9. **Option (d) is correct.**  
Hypothesis is an assumption of the results of the study.  
Sample is a group chosen from the population that represents the entire population.  
Research design is the blueprint or a plan of research which a researcher will follow for her/his study.  
Research tool is the method or technique which is used for collection of data.
10. **Option (d) is correct.**  
Predilection is a tendency to favour something or be biased towards something. Personal predilection in research means presenting facts in such a way that makes the audience support the idea which is being presented.
11. **Option (a) is correct.**  
Media of communication is the medium used by the sender to convey a message to the receiver of the message. The media in classroom teaching can be White Board, Projector, Model, etc. The selection of media is done by the teacher on the basis of the students, facilities available and the message which is to be conveyed.
12. **Option (b) is correct.**  
For developing communication skills in students today, they should be encouraged to think critically for concepts, learn and use a wide variety of words, and use technology in a constructive manner.

- 13. Option (c) is correct.**  
Group communication can be understood as the process of communicating to a group of audience in order to exchange information, receive feedback and discuss an idea. It is normally done to achieve a predefined objective or goal.
- 14. Option (d) is correct.**  
Analysing your audience and listeners is the key to effective lecture delivery. Listener analysing provides opportunities to plan lectures in a way that is easily understandable to the audience. Teachers can use this tool to plan for how to effectively engage their students.
- 15. Option (c) is correct.**  
Entropy refers to systematic movement towards distortion or disorder. Entropy in communication will mean lack of order. The entropy in information as a concept was given in 1948 by Claud Shannon.
- 16. Option (a) is correct.**  
The sequence is:  
The first number is 196 and,  
 $(196 \times 2) - 8 = 384$   
 $(384 \times 2) - 32 = 736$ , where  $8 \times 4 = 32$   
So,  
 $(736 \times 2) - 128 = 1344$ , where  $32 \times 4 = 128$
- 17. Option (b) is correct.**  
The sequence of the alphabet is reversed from right to left with the letter in between two letters. Example in "BCA", it is A and B in reverse with C in between.
- 18. Option (d) is correct.**  
Vinod's mother-in-law will be the mother of his wife. Vinod's wife is the mother-in-law of Amit. Hence, Vinod is the father-in-law of Amit.
- 19. Option (c) is correct.**  
FISH is written as EHRG. The coding is done backwards *i.e.*, E-F, H-I, R-S, G-H. So, JUNGLE will be written as ITMFKD.
- 20. Option (c) is correct.**  
63% are female which means 37% is male. So, 37% is equal to 111. 100% will be 300.  
 $(A \times 37)/100 = 111$   
 $(111 \times 100)/37 = 300$
- 21. Option (b) is correct.**  
Ad populum is a way of argument in favour of something which is false. It is based on the belief that the majority of people think that something is right. Hence, it is right.
- 22. Option (d) is correct.**  
Petitio Principii is a fallacy based on a circular thought process. The argument is circular. It is a situation when the conclusion or ending is assumed initially and then the arguments are formed to support that conclusion.
- 23. Option (b) is correct.**  
Anumana or inference is the act of deriving a conclusion based on the probable relationship to the situation. Even though Anil is not attentive in class and his parents also think that he is not active. But still, he achieves good marks. So it is derived from the good result that he studies when he is alone.
- 24. Option (b) is correct.**  
Purvavat anumana is an argument where we see or experience any incident and perceive the result of that incident.  
Sesavat Anumana is an argument where we see or experience the result and then we perceive the cause of that incident.  
Hence, the basis of both of these is perception.
- 25. Option (b) is correct.**  
AEIO is a framework is a syllogism rule used for drawing inferences or conclusions. A and I are positive statements. E and O are negative statements. The statement "The salt on the table has iodine" does not fit in this framework.
- 26. Option (d) is correct.**  
The number of companies having more production is 2. The number of companies having more demand is 3. So, the ratio is 2:3.
- 27. Option (a) is correct.**  
Ratios of all the companies are:-  
A - 2:1 = 36/18  
B - 1:3 = 6/18  
C - 5:2 = 45/18  
D - 4:9 = 8/18  
E - 3:2 = 27/18  
Hence, Ratio of company B is the lowest.
- 28. Option (b) is correct.**  
Total demand is 5800  
Average demand is 1160  
Total production is 4850  
Average production is 970  
Difference between average demand and average production is 190

29. **Option (d) is correct.**  
The demand of computers is less than the production of computers in companies B and D. Hence, the answer is 2.
30. **Option (b) is correct.**  
The demand for computers of company D is 600. The demand for computers of company B is 300. The demand in D is more than that of company B by 300.  
 $300 \times 2 = 600$   
Hence 2 times.
31. **Option (b) is correct.**  
Plotter is a modern type of graphic printer that is capable of drawing images using ink pens. It draws lines and not series of dots like traditional printers
32. **Option (a) is correct.**  
1,000 Terabytes = 1 Petabyte  
1,000 Petabytes = 1 Exabyte  
1,000 Exabytes = 1 Zettabyte  
1,000 Zettabytes = 1 Yottabyte.
33. **Option (d) is correct.**  
E-commerce is the process of buying and selling goods through the internet and websites. The money is transferred electronically at the time of buying or can sometimes be paid when the goods are physically received.
34. **Option (b) is correct.**  
The internet is a global connection of computers through which users can share information and data. Intranet is a local network of computers through which people can share information and data.
35. **Option (b) is correct.**  
Scanner is the device that is capable of capturing the image from a source like sheet, posters, book pages, etc. It saves that image on the computer or desktop in required format.
36. **Option (d) is correct.**  
Solid waste is a non usable solid human waste generated from human beings from residential areas, institutions or industries, and agriculture.
37. **Option (c) is correct.**  
Soil pollution is increased through industrial waste, lack of proper disposal system for nuclear waste and lack of a good sewage system.
38. **Option (d) is correct.**  
Mangroves are small trees that grow on coastlines. They hold the soil at the coast line and prevent erosion due to tides, currents, etc.
39. **Option (b) is correct.**  
VOCs or volatile organic waste are the gases emitted from some solid waste that can affect the health of people negatively. They create smog and may cause cancer.
40. **Option (b) is correct.**  
The goal of the Paris agreement signed in 2015 (COP 21) was to limit greenhouse gas emission globally. This will substantially control the temperature increase and global climate changes.
41. **Option (c) is correct.**  
Hinayana is a school of Buddhist study. The Hinayana school does not propose the divinity of lord buddha. It says that salvation can be achieved by every individual through self-control. Vallabhi university was an important centre for Hinayana study between 600-1200 CE.
42. **Option (d) is correct.**  
Few non-conventional and new areas of study are gerontology, ethical hacking and pet groomer studies. Gerontology studies the science of physical ageing and its impact on the mind along with societal concepts.
43. **Option (d) is correct.**  
Four main result areas of Skills Acquisition and Knowledge Awareness for Livelihood Promotion (SANKALP) project are—(i) Institutional Strengthening; (ii) Quality Assurance; (iii) Inclusion; and (iv) Expanding Skills through Public Private Partnerships.  
Its aim is implementation of regulations of national skill development mission.
44. **Option (b) is correct.**  
The reforms related areas of NITI Aayog 3 year agenda exclusively were civil service, electoral issues and corruption issues.
45. **Option (d) is correct.**  
Value integration is the development of values through teaching the learning process in various areas of learning. In early stages of life, a person will learn through imitating the adults, exposure to the external environment and self-evaluation. Value consolidation through integration will be the advanced stage of value development.



**46. Option (d) is correct.**

There are two contradictory statements which affect the employment of human rights. The first important area of human rights is related to political ethics.

**47. Option (c) is correct.**

The epistemological concept of human rights deals with the understanding of how a person balances the idea and reality. The understanding of how a person balances between moral and cultural issues.

**48. Option (b) is correct.**

Concept of human rights mixes two contradictory concepts without understanding the inherent difference between these two. It ignores the absence of complementarity in this relationship. Complementary relationship

is when two concepts improve each other's quality.

**49. Option (a) is correct.**

The discourse of human rights is not self-evident as a concept, because it obstructs the origin and features of human rights as an idea and practice.

**50. Option (d) is correct.**

The initial concept of human rights is not understood clearly but a new layer has been added to it. This new idea is initiated by UDHR (Universal Declaration of Human Rights) that identifies the government as being responsible for enforcement of human rights. This has made human rights a trans-political phenomenon or a phenomenon being discussed across various countries.

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# UGC NET PAPER-1

## GENERAL APTITUDE

# Solved Paper December 2019

Time Allotted: 1 Hour

Maximum Marks: 100

### Important Instructions:

1. Each question carries 2 marks.
2. This paper consists of fifty (50) multiple-choice type of questions.
3. Each item has four alternative responses marked (a), (b), (c) and (d). You have to darken the oval as indicated below on the correct response against each item.  
**Example:** where (c) is the correct response.
4. Your responses to the items are to be indicated in the **Answer Sheet**.
5. **Use of any calculator or log table etc., is prohibited.**
6. **Negative Marking: For each incorrect answer 0.5 marks shall be deducted.**

1. Identify those features of learner behaviour which are associated with understanding level teaching:
  1. The student renders facts and information in his/her own words
  2. The student immediately recalls the facts taught
  3. The student gives his/her own examples in order to explain a point
  4. The student interprets the meanings in various ways
  5. The student correctly reproduces the sequences taughtSelect your answer from the following options:  
(a) 1, 2 and 3                      (b) 2, 3 and 4  
(c) 2, 4 and 5                      (d) 1, 3 and 4
2. Which of the following sequences depicts outcome based curriculum design for college level teaching programmes?
  - (a) Content, teaching-learning, learning outcomes, evaluation.
  - (b) Desired learning outcomes, contents, teaching-learning, assessment and evaluation.
  - (c) Teaching-learning, content, learning outcomes, assessment and evaluation.
  - (d) Content, learning outcomes desired, teaching-learning, evaluation and assessment
3. Which of the following is a key to effective teaching behaviour?
  - (a) Teacher mediated dialogue which helps learners restructure what is being learned.
  - (b) Eliciting clarification of an answer given by students.
  - (c) Soliciting additional information about a response of students.
  - (d) Promoting low error rate (high success) contributes to increased levels of students' self esteem and positive attitude.
4. For encouraging 'learning to learn', the emphasis on which of the following would be most appropriate?
  - (a) Use of educational technology gadgets
  - (b) Organizing teaching to increase opportunity for transfer of learning
  - (c) Assigning tasks to be mastered by students
  - (d) Frequent tests to be conducted
5. In which of the following modes of assessment the potential for increasing intrinsic motivation is optimum?
  - (a) Formative assessment based evaluation
  - (b) Computer testing based assessment
  - (c) Summative assessment
  - (d) Norm-referenced based testing assessment
6. In which of the following research methods, an empirico—inductive paradigm is employed?
  1. Ethnographic probe
  2. Case study method
  3. Ex post facto method
  4. Narrative method
  5. Experimental methodSelect your answer from the options given below:  
(a) 1, 2 and 3                      (b) 2, 3 and 4  
(c) 1, 2 and 4                      (d) 3, 4 and 5

7. The probability sampling procedures are mostly used in which of the following researches?
1. Survey researches
  2. Experimental researches
  3. Phenomenology based researches
  4. Action researches
  5. Correlational design based researches
- Select your answer from the following options:
- (a) 1, 2 and 5                      (b) 1, 2 and 3  
(c) 2, 3 and 4                      (d) 3, 4 and 5
8. The style of writing a thesis and research article has to be
- (a) Creative in so far as diction is concerned
  - (b) Scientific in respect of language used
  - (c) Mechanical in so far as placement of figures and tables is concerned
  - (d) Variable in respect of referencing
9. The application of which of the following ICT in research will ensure wider coverage and accessibility of needed information?
- (a) LAN                                      (b) WAN
  - (c) Skype                                      (d) Intranet
10. A researcher while reporting his/her research findings gives weightage to stake holder's perspective in a qualitative research theme. This will involve
- (a) Violation of ethical norms
  - (b) Bias and prejudices
  - (c) Disclosure of reality situation
  - (d) Inappropriate interference of others in research
11. In the linear model of communication, the expected result is
- (a) Psychological disruption
  - (b) Removal of physical noise
  - (c) High level of obstruction
  - (d) Semantic accuracy
12. An important element in classroom communication is
- (a) Physical infrastructure
  - (b) Fields of experience
  - (c) Conditioned feedback
  - (d) Linearity of message
13. The concept of proximal development, related to educational communication, was developed by
- (a) Sigmund Freud                      (b) Kurt Lewin
  - (c) Lev Vygotsky                      (d) Alberk Bandura
14. Effective oral communication demands
1. Self-confidence
  2. Long pauses
  3. Consistent practice
  4. Business like approach
  5. Knowing the audience
  6. Aggressive questioning
- Choose the correct answer from the following option:
- (a) 2, 3 and 4                      (b) 3, 4 and 6  
(c) 4, 5 and 6                      (d) 1, 3 and 6
15. Given below are two statements-one is labelled as Assertion (A) and the other is labelled as Reason (R):
- Assertion (A):** The spoken and written words are two media of many available for communication in the classroom
- Reason (R):** Communication through any medium does not happen through attitudes of encoders
- In the light of the above two statements choose the correct option from the choices given below:
- (a) Both (A) and (R) are true and (R) is the correct explanation of (A)
  - (b) Both (A) and (R) are true, and (R) is not the correct explanation of (A)
  - (c) (A) is true, but (R) is false
  - (d) (A) is false, but (R) is true
16. If A is directly proportional to B; B is inversely proportional to C and C is directly proportional to D, then
1. A is inversely proportional to D
  2. A is directly proportional to D
  3. A is directly proportional to C
  4. A is inversely proportional to C
- Choose the correct answer from the options given below:
- (a) 1 and 4                      (b) 2 only  
(c) 1 only                      (d) 3 and 4
17. Average of two numbers  $a$  and  $b$  is 22 and  $60\%$  of  $a = 50\%$  of  $b$ . What is the product of  $a$  and  $b$ ?
- (a) 160                                      (b) 384
  - (c) 480                                      (d) 484

18. B is the only daughter of the Maternal grandmother of A. How is A related to B?  
 (a) Sister (b) Daughter  
 (c) Cousin (d) Mother
19. In a certain code "CREDIT" is written as "EPGBKR" and in the same code, "DEBIT" will be written as  
 (a) FDCGV (b) FGCDV  
 (c) FCDGV (d) FCDVG
20. The next term of the series is  
 1D3, 3H5, 5L7, \_\_\_\_\_  
 (a) 7 P 9 (b) 7 R 9  
 (c) 7 N 9 (d) 7 L 9
21. The attributes shared by all and only those objects to which a term refers is known as  
 1. The intention of a term  
 2. Connotation  
 3. Denotation  
 4. The extension of a term  
 Choose the correct code from below:  
 (a) 4 only (b) Both 1 and 2  
 (c) Both 3 and 4 (d) 3 only
22. According to traditional square of opposition if two propositions are so related that they cannot both be false, although they may both be true is called:  
 (a) Subaltern (b) Subcontraries  
 (c) Contradictory (d) Contrary
23. An informed fallacy in which the conclusion of an argument is stated or assumed in any one of the premises is known as:  
 1. Begging the question  
 2. Circular argument  
 3. Ignoratio elenchi  
 4. Petitio principii  
 Choose the correct option from the following:  
 (a) 1, 2 and 4 (b) 1 and 3  
 (c) 3 only (d) 2, 3 and 4
24. Which of the following is not correct with reference to Anumana according to classical Indian school of logic?  
 (a) Linga/Sadhana is the middle term  
 (b) Paksa is the minor term  
 (c) Sadhya is the major term  
 (d) Hetu is the minor term

25. Given below are two premises with four conclusions drawn from them. Which of the following is a valid conclusion drawn from the premises?

**Premises:**

- (i) All diaries are copies  
 (ii) No copy is book

**Conclusions:**

1. Some diaries are books  
 2. Some books are copies  
 3. No book is copy  
 4. No diary is book

Choose the correct option.

- (a) 1 and 2 (b) 3 and 4  
 (c) 2 and 3 (d) 1 and 4

**Direction for questions 26 to 30:**

Consider the table given below for total exports of six countries over five years (in crores of rupees):

Country/ Year	2008	2009	2010	2011	2012
A	20	40	60	45	90
B	30	25	15	50	100
C	50	55	70	90	65
D	45	60	20	15	25
E	60	50	55	100	110
F	24	40	60	75	120

**Assume:** Profit = Export – Import.

26. What was the profit of all the countries together in the year 2012 if the total imports of all the countries together was rupees 385 crore?  
 (a) Rupees 510 crores (b) Rupees 280 crore  
 (c) Rupees 160 crore (d) Rupees 125 crore
27. If the ratio of export to import in country F and country D are 4:1 and 1:2 respectively in the year 2008, then what is the total import of country F and D together in that particular year? (in crores of rupees)  
 (a) 44 (b) 65  
 (c) 92 (d) 96
28. If the export of country A in the year 2013 is 20% more than the total export of country B in 2011 and the export of country E in 2010 together, then what was the profit of A in the year 2013 if its import was ₹ 92 crore for that year? (In crores of rupees)  
 (a) 10 (b) 22  
 (c) 34 (d) 46

29. By what percent is the average export of country E over all the given years more than the average export of country C over all the years?

- (a)  $13\frac{7}{11}\%$                       (b)  $14\frac{7}{11}\%$   
 (c)  $13\frac{5}{7}\%$                         (d)  $14\frac{5}{7}\%$

30. What is the percentage increase in the export of all the countries together from the year 2009 to 2011?

- (a)  $35\frac{8}{9}\%$                         (b)  $38\frac{8}{9}\%$   
 (c)  $40\frac{8}{9}\%$                         (d)  $38\frac{7}{8}\%$

31. \_\_\_\_\_ represents raw facts, whereas \_\_\_\_\_ is processed meaningful data.

- (a) Information, Bits  
 (b) Records, Bytes  
 (c) Data, Information  
 (d) Information, Reporting

32. Which of the following storage devices stores the maximum amount of data?

- (a) Compact disc                      (b) Floppy disc  
 (c) Hard disc                            (d) Magnetic optic disc

33. Which of the following is a computer based system that stores and manipulates data which are viewed from a geographical point or reference?

- (a) Database System  
 (b) Geographical Information System  
 (c) Geographic System  
 (d) Software System

34. VDU stands for

- (a) Virtual Display Unit  
 (b) Virtual Detection Unit  
 (c) Visual Display Unit  
 (d) Visual Detection Unit

35. International Computer Security Day is observed on

- (a) 18th July                            (b) 30th November  
 (c) 2nd December                      (d) 23rd December

36. Given below are two statements—one labelled as Assertion (A) and the other is labelled as Reason (R).

**Assertion (A):** The impact of natural disasters does not depend on socio-economic factors.

**Reason (R):** Natural disasters do not discriminate between people of a society and other communities.

In the light of the above two statements, choose the correct option:

- (a) Both (A) and (R) are true and (R) is the correct explanation of (A)  
 (b) Both (A) and (R) are true and (R) is not the correct explanation of (A)  
 (c) (A) is true but (R) is false  
 (d) (A) is false but (R) is true

37. Under Kyoto Protocol, the first commitment period for reduction of greenhouse gas emissions by 37 industrialized and European community countries was:

- (a) 1997-2005                            (b) 2000-2012  
 (c) 2008-2012                            (d) 2005-2015

38. Exposure to noise pollution cause

1. Weakening of immune system
2. Sleeplessness
3. Speech interference
4. Increase in blood pressure
5. Shift in threshold of hearing
6. Respiratory problems

Choose the correct option from those given below:

- (a) 1, 2, 3, 4 and 5                      (b) 2, 3, 4 and 5  
 (c) 2, 3, 4, 5 and 6                      (d) 1, 2, 3, 4, 5 and 6

39. The potential of geothermal power in India is approximately

- (a) 10 GW                                (b) 5 GW  
 (c) 20 GW                                (d) 25 GW

40. Which of the following air pollutants are produced from room deodorizers?

- (a) Inhalable particulate matter  
 (b) Carbon monoxide  
 (c) Ozone  
 (d) Volatile organic compounds

41. Given below are the statements—one is labelled as Assertion (A) and the other is labelled as Reason (R):

**Assertion (A):** Considering higher education as a non priority for the state is linked to the withdrawal of public funding to it.

**Reason (R):** The pressure of free enterprise system in this regard is an attempt to expand their educational market.

In the light of above two statements, choose the correct option:

- (a) Both (A) and (R) are true and (R) is the correct explanation of (A)  
 (b) Both (A) and (R) are true and (R) is not the correct explanation of (A)  
 (c) (A) is true, but (R) is false  
 (d) (A) is false, but (R) is true
42. The community colleges have provisions for  
 (a) Single admission  
 (b) Concurrent admission  
 (c) Self-financing system  
 (d) Teaching at home
43. An institution desirous of applying for deemed to be university status must have been in existence for at least  
 (a) 5 Years (b) 10 Years  
 (c) 20 Years (d) 25 Years
44. The WTO negotiation on higher education deals with issues like:  
 1. education as a free service  
 2. vigorous social affirmation in developed countries  
 3. assigning important role for civil society  
 4. education as a trade  
 5. education as a commodity  
 6. withdrawal of public sector from higher education
- Choose the correct answer from the options given below:  
 (a) 1, 3 and 4 (b) 1, 2 and 4  
 (c) 2, 3 and 5 (d) 4, 5 and 6
45. The objective of Indian Government behind setting up of HEFA (Higher Education Finance Agency) is to provide financial support for:  
 (a) Improvement of infrastructure is premier institutions of the country  
 (b) Research projects of faculty  
 (c) Research collaboration between Indian and Foreign Universities  
 (d) Research collaboration between Indian Institutions and Industry

**Direction for questions 46 to 50:**

Read the following passage carefully and answer the questions that follows:

Under the labour theory of value, the value or price of a commodity depends exclusively on the amount of labour going into the production of the commodity. This implies that either labour is the only factor of production or labour is used in the same fixed proportion in the production of all commodities and that labour is homogeneous, *i.e.*, of only one type. Since neither of these assumptions is true, we cannot base the explanation of comparative advantage on the labour theory of values specifically, labour is not the only factor of production, nor is it used in the same fixed proportion in the production of all commodities. For example, much more capital equipment per worker is required to produce some products, such as steel, than to produce other products such as textile. In addition, there is usually some possibility of substitution between labour, capital and other factors in the production of most commodities. Furthermore, labour is obviously homogeneous but varies greatly in training, productivity and wages. At the very least, we should allow for different productivity of labour. Indeed, this is how the Ricardian theory of comparative advantage has been tested empirically. In any event, the theory of comparative advantage need not be based on the labour theory of value but can be explained on the basis of the opportunity cost theory which is acceptable. To be noted is that Ricardo himself did not believe in the labour theory of value and used it only as a simple way to explain the law of comparative advantage. The law of comparative advantage is sometimes referred to as the law of comparative cost.

46. What does the Labour Theory of Value imply?  
 (a) Labour is an extra factor in production  
 (b) Labour has a limited role in production  
 (c) Labour has the highest value in production  
 (d) Commodity price and labour value are directly related
47. In the Labour Theory of Value, when it comes to production of commodities, engagement of labour is  
 (a) heterogeneous  
 (b) in fixed proportion  
 (c) in varies proportion  
 (d) capital intensive

48. Products like steel need  
(a) less workers      (b) more workers  
(c) more machines    (d) less machines
49. The Ricardian Theory is examined on the basis of  
(a) labour value  
(b) homogeneity of labour  
(c) different levels of labour productivity  
(d) law of possibility
50. According to the author of the passage  
1. labour is the basis of commodity pricing  
2. labour can be substituted with capital
3. less capital equipment per worker is required for products like textile  
4. opportunity cost can help explain comparative advantage  
5. Ricardo used the labour theory of value only to explain comparative cost  
6. Ricardo was not sure of his own theory
- Choose the correct option:  
(a) 1, 2 and 3      (b) 2, 3 and 4  
(c) 4, 5 and 6      (d) 3, 4 and 5

□□□

## Answer Key

Q.No.	Answer	Topic's Name	Chapter's Name
1	d	Teaching	Teaching aptitude
2	b	Methods of teaching in institutions of higher learning	Teaching aptitude
3	d	Teaching	Teaching aptitude
4	b	Factors affecting teaching	Teaching aptitude
5	a	Evaluation system	Teaching aptitude
6	c	Methods of research	Research aptitude
7	a	Methods of research	Research aptitude
8	b	Thesis and article writing	Research aptitude
9	b	Application of ICT in research	Research aptitude
10	c	Research Ethics	Research aptitude
11	d	Types of communication	Communication
12	b	Classroom communication	Communication
13	c	Classroom communication	Communication
14	d	Effective communication	Communication
15	c	Classroom communication	Communication
16	a	Logical reasoning	Mathematical reasoning
17	c	Percentage	Mathematical reasoning
18	d	Relationships	Mathematical reasoning
19	c	Codes	Mathematical reasoning
20	a	Number and letter series	Mathematical reasoning
21	b	Connotations	Logical reasoning
22	b	Propositions	Logical reasoning
23	a	Fallacies	Logical reasoning
24	d	Anumana Indian logic	Logical reasoning
25	b	Syllogism	Logical reasoning
26	d	Data interpretation	Data interpretation
27	d	Data interpretation	Data interpretation
28	c	Data interpretation	Data interpretation
29	a	Data interpretation	Data interpretation
30	b	Data interpretation	Data interpretation
31	c	Terminology	Information and communication technology
32	c	Storage devices	Information and communication technology
33	b	Terminology	Information and communication technology
34	c	Terminology	Information and communication technology
35	b	Governance	Information and communication technology
36	d	Natural disaster	People, development and environment
37	c	Kyoto Protocol	People, development and environment
38	b	Noise pollution	People, development and environment
39	a	Geothermal power	People, development and environment



40	d	Air pollution	People, development and environment
41	a	Governance and administration	Higher education system
42	c	Governance and administration	Higher education system
43	c	Governance and administration	Higher education system
44	d	Policies, governance and administration	Higher education system
45	a	Policies, governance and administration	Higher education system
46	d	Fact based	Comprehension
47	b	Fact based	Comprehension
48	c	Fact based	Comprehension
49	c	Inference based	Comprehension
50	d	Inference based	Comprehension

**ANSWERS WITH EXPLANATIONS**

1. **Option (d) is correct.**  
To enhance understanding on the part of learners, teacher needs to ensure that students are able to write and discuss the information in their own words; are able to identify the related examples; and are able to interpret the meaning of concepts in multiple ways.
2. **Option (b) is correct.**  
For ensuring outcome-based teaching at higher level, the steps will be
  1. Identifying desired outcome/objective from course
  2. Designing the appropriate content for the course
  3. Teaching-learning process
  4. Evaluation of the learning by using appropriate methods.
3. **Option (d) is correct.**  
For effective teaching-learning process, teacher needs to develop self-esteem and self-confidence in learners by increasing the success rate of students. This can be done by ensuring that learners are able to understand the concepts.
4. **Option (b) is correct.**  
Learning to learn is the capability to manage own learning; this includes effective time management and organization both. Teachers can ensure opportunities of learning are provided to students.
5. **Option (a) is correct.**  
Formative assessment aims to provide continuous feedback to teacher and students both. This encourages identification of strengths and weaknesses of learners and provides them opportunities to develop their self-learning skills.
6. **Option (c) is correct.**  
Empirico stands for data by observations and inductive research is for specific to generalization. In the inductive framework, researcher collect data from experiments, surveys and experiences. Then researcher tries to develop a generalized theory based on that data.
7. **Option (a) is correct.**  
Probability sampling is when selection of sample units from the population is done randomly and is based on chance. This means that all units have equal chances of being selected for research. It is mostly used in survey, experimental and correlational research.
8. **Option (b) is correct.**  
Thesis or research article should be written by following scientific process and procedures. Scientific methods will have clearly defined sections, subsections and style of writing.
9. **Option (b) is correct.**  
WAN or Wide Area Network provides wider access to information and coverage as it is spread in a large geographic area.
10. **Option (c) is correct.**  
In qualitative research, perspective of stake holders should have more weightage than biasness or opinion of researcher. If a researcher doing the same, it is disclosure of reality or tye real situation.
11. **Option (d) is correct.**  
Linear communication is a one-way communication where a message is transferred by sender and receiver will only accept it. The language and signs used will be accurate as per the sender.
12. **Option (b) is correct.**  
Classroom communication will always be effective if teacher includes the range of personal experiences while explaining the concepts.
13. **Option (c) is correct.**  
Zone of proximal development refers to the difference between what a learner can do without any help what he can do with the guidance. The concept of proximal development was developed by Lev Vygotsky.

14. **Option (d) is correct.**

Effective oral communication will be based on self-confidence, consistent practice and knowing the audience but communication gets effected by attitude of encoders. So reason is not correct.

15. **Option (c) is correct.**

For classroom communication there are many mediums of communication along with spoken and written words like using models and diagrams, conducting practical experiments, etc.

16. **Option (a) is correct.**

A is directly proportional to B  
 B is inversely proportional to C  
 C is directly proportional to D  
 This means that,  
 A and B both are inversely proportional to C  
 And, since C and D are directly proportional, so  
 A and B are inversely proportional to C and D.

$$A \propto B$$

$$B \propto \frac{1}{C}$$

$$C \propto D$$

17. **Option (c) is correct.**

$$(a + b)/2 = 22$$

$$a + b = 22 \times 2 = 44,$$

$$a = 44 - b, \text{ and}$$

$$a \times 60/100 = b \times 50/100$$

$$3a/5 = b/2$$

$$a = b/2 \times 5/3 = 5b/6$$

$$44 - b = 5b/6$$

$$5b/6 + b = 44$$

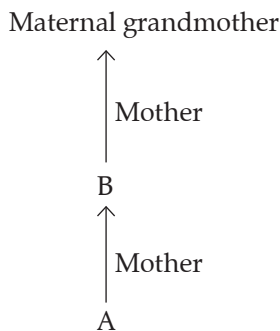
$$b = 24$$

$$a = 20$$

$$a \times b = 480$$

18. **Option (d) is correct.**

Adjust graph (skipped) as provided:



Maternal grandmother of A will be mother of B. Since B is the only daughter, hence she is the mother of A.

19. **Option (c) is correct.**

$$\begin{pmatrix} C \\ +2 \\ E \end{pmatrix} \begin{pmatrix} R \\ -2 \\ P \end{pmatrix} \begin{pmatrix} E \\ +2 \\ G \end{pmatrix} \begin{pmatrix} D \\ -2 \\ B \end{pmatrix} \begin{pmatrix} I \\ +2 \\ K \end{pmatrix} \begin{pmatrix} T \\ -2 \\ R \end{pmatrix}$$

$$\begin{pmatrix} D \\ +2 \\ F \end{pmatrix} \begin{pmatrix} E \\ -2 \\ C \end{pmatrix} \begin{pmatrix} B \\ +2 \\ D \end{pmatrix} \begin{pmatrix} I \\ -2 \\ G \end{pmatrix} \begin{pmatrix} T \\ +2 \\ V \end{pmatrix}$$

CREDIT is written as EPGBKR. One alphabet is an alternate letter in forward flow and then next is an alternate letter in reverse flow. Like C D E and then R Q P. This is the format for the word.

20. **Option (a) is correct.**

Numbers are written in one gap like 1-3, 3-5, 5-7. So the number will be 7-9. Alphabets are written at the gap of 3 like- D- e f g- H- i j k- L. So next alphabet will be L-m n o -P.

21. **Option (b) is correct.**

Connotation is a suggested meaning from a word which is different from its literal meaning. Intention of a term is the actual definition of the term.

22. **Option (b) is correct.**

Example of sub-contrary will be:  
 Some cows are white  
 Some cows are not white

23. **Option (a) is correct.**

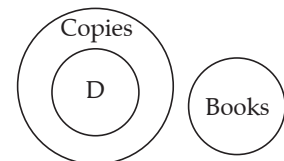
Petito Principii is a fallacy where the argument is such the conclusion is considered to be true, but for that one has to consider the premise to be true. Example- Every girl wants to buy that red dress, because it is the most beautiful dress available in the market.

24. **Option (d) is correct.**

Minor term- Praksha  
 Major term- Sadhya  
 Middle term- Hetu  
 Example- We see smoke on hill and conclude that there is fire.  
 Fire- Sadhya  
 Hill- Praksha  
 Smoke- Hetu (The reason)

25. **Option (b) is correct.**

All diaries are copies  
 No copy is Book  
 So,  
 No diary is Book, and  
 No book is copy



- 26. Option (d) is correct.**  
 Import of all countries together in 2012 = 385 cr  
 Export of all countries together in 2012 = 510 cr  
 Total profit = 125 cr
- 27. Option (d) is correct.**  
 Ratio of export of F in 2008 = 4:1  
 Export of F in 2008 = 24 cr  
 Let import be A, then  $24:A = 4:1$   
 Import of F in 2008 =  $24 \times \frac{1}{4} = 6$   
 Ratio of export of D in 2008 = 1:2  
 Export of D in 2008 = 45 cr  
 Let Import be B, then  $45:B = 1:2$   
 Import of D in 2008 =  $45 \times \frac{2}{1} = 90$   
 Total import of F and D = 96 cr
- 28. Option (c) is correct.**  
 Export of country B in 2011 = 50 cr  
 Export of country E in 2010 = 55 cr  
 Total E and B = 105 cr  
 Export of Country A in 2013 =  $105 + \frac{20}{100} \times 105 = 105 + 21 = 126$  cr  
 Import of Country A in 2013 = 92 cr  
 Profit =  $126 - 92 = 34$  cr
- 29. Option (a) is correct.**  
 Average Export of E =  $\frac{375}{5} = 75$   
 Average Export of C =  $\frac{330}{5} = 66$   
 Avg export of E is more than Avg export of C by  
 $= 75 - 66 = 9$   
 Percentage of difference =  $66 \times \frac{A}{100} = 9$   
 $A = \left(\frac{9}{66}\right) \times 100 = \frac{150}{11} = 13\frac{7}{11}\%$ .
- 30. Option (b) is correct.**  
 Export of all countries in 2009 = 270  
 Export of all countries in 2011 = 375  
 Difference = 105  
 Percentage increase =  $270 \times \frac{A}{100} = 105$   
 $A = \left(\frac{105}{270}\right) \times 100 = 38\frac{8}{9}\%$ .
- 31. Option (c) is correct.**  
 Data is the raw form of information. It is further analysed by user to get any useful information.
- 32. Option (c) is correct.**  
 Hard disks are magnetic storage devices for computers which can store a large quantity of data and can be expanded as per the requirements of the user.
- 33. Option (b) is correct.**  
 GIS is a software that collects, stores, retrieves useful information regarding the specific geographic area on earth and its surroundings.
- 34. Option (c) is correct.**  
 Visual display unit is an output device that uses technology to present image and text. The flat screen or a projector are examples of VDU.
- 35. Option (b) is correct.**  
 Since 1988, computer security day has been celebrated on 30th November to generate awareness among people regarding data security and protection of electronic devices.
- 36. Option (d) is correct.**  
 Natural disasters always have a long lasting impact on socio and economic conditions of the area. Increase in poverty, loss of infrastructure and negative impact on families are few factors which are linked to natural disasters.
- 37. Option (c) is correct.**  
 The Kyoto protocol is a treaty signed in 1997 and created by the UN to control the harmful gas emission and work towards the reduction of climate change. In its first commitment period the member countries committed to decrease the gas emission by 5%.
- 38. Option (b) is correct.**  
 Excessive noise pollution can cause sleeplessness, speech problems, hearing problems and High blood pressure.
- 39. Option (a) is correct.**  
 Geothermal energy is the source of heat within the surface and subsurface of earth. It is a renewable form of energy and it comes from rocks and streams under the surface of earth.
- 40. Option (d) is correct.**  
 Room deodorizers can cause migraines, asthma and other diseases because of the presence of chemicals like VOCs, benzene, etc.
- 41. Option (a) is correct.**  
 Government funding in the education sector has reduced dramatically and hence more emphasis is given to starting more free enterprises in this sector.
- 42. Option (c) is correct.**  
 Community colleges are more affordable options in comparison to large universities. Expansion of skill programmes in the country

has also given a push to such low-cost community colleges. They do not receive any maintenance from UGC and are self-financing institutes.

**43. Option (c) is correct.**

As per the new guidelines of UGC in 2019, any institution which wants the status of deemed university must be operational for more than 20 years. It should have at least 100 teachers and 2000 students.

**44. Option (d) is correct.**

World trade organization founded in 1995, regulates and provides a framework regarding the trade between nations globally. It considers the education sector as a commodity and a trade. It believes in withdrawal of public sector funding from this sector.

**45. Option (a) is correct.**

HEFA is a joint venture between the government of India, MHRD and Canara Bank started in 2017. The objective is to provide loans at low interest to universities for research and development along with investment in infrastructure.

**46. Option (d) is correct.**

According to labour theory of value, the price of a commodity depends on the amount of

labour being used for production. This means that labour is the only factor of production being used or is used in the fixed proportion.

**47. Option (b) is correct.**

According to labour theory of value, the labour is engaged in a fixed proportion to that of the commodity being produced and it is homogeneous.

**48. Option (c) is correct.**

According to the paragraph, more capital equipment is required per worker for production of steel in comparison to products like textile.

**49. Option (c) is correct.**

The Ricardian theory of competitive advantage has been tested based on possibilities of different levels of productivity of labour based due to different training, etc.

**50. Option (d) is correct.**

According to the author, Ricardo used the labour theory to explain comparative cost only. He used the opportunity cost concept to explain the theory of comparative advantage. Author also pointed out that more capital equipment is required per worker for production of steel in comparison to products like textile.

□□□

# UGC NET PAPER-1

# GENERAL APTITUDE

# Solved Paper June 2019

Time Allotted: 1 Hour

Maximum Marks: 100

### Important Instructions:

1. Each question carries 2 marks.
2. This paper consists of fifty (50) multiple-choice type of questions.
3. Each item has four alternative responses marked (a), (b), (c) and (d). You have to darken the oval as indicated below on the correct response against each item.  
**Example:** where (c) is the correct response.
4. Your responses to the items are to be indicated in the **Answer Sheet**.
5. **Use of any calculator or log table etc., is prohibited.**
6. **Negative Marking: For each incorrect answer 0.5 marks shall be deducted.**

1. Which type of evaluation focuses on the identification of deficiencies and difficulties of the learner?  
(a) Summative evaluation  
(b) Follow up evaluation  
(c) Diagnostic evaluation  
(d) Criterion-referenced evaluation
2. From the following list identify the qualitative research characteristics and select your answer from the codes given below:  
(i) Creating purpose statements and research questions  
(ii) Stating the purpose and research questions in a broad way  
(iii) Collecting data based on words from a small number of individuals  
(iv) Collecting numeric data and statistical analysis  
(v) Using text analysis and interpreting larger meanings of the findings  
(a) (ii), (iii) and (v)      (b) (i), (ii) and (iii)  
(c) (i), (ii) and (iv)      (d) (i), (iii) and (v)
3. Which of the following is an example of higher order cognitive learning outcome?  
(a) Learning of facts and their sequences  
(b) Learning roles and action sequences  
(c) Learning of concepts and abstractions  
(d) Learning of awareness and valuing
4. Tertiary source of data is  
(a) Films, hoardings and posters  
(b) Government gazette, newspapers and magazines  
(c) Information derived from both primary and secondary sources  
(d) Data collected from policy papers
5. What are the elements of evaluation plan?  
1. Purpose                      2. Resources  
3. Analysis                      4. Authority  
Select the correct answer from the options given below:  
(a) 1 and 3                      (b) 2 only  
(c) 2, 3 and 4                      (d) 1, 2 and 3
6. Position papers are  
(a) Compiling of academic articles  
(b) Providing review articles  
(c) Offering a synopsis of an extended research  
(d) Highlighting of issues and depiction of status
7. A hypothesis is  
(a) A certain and established finding  
(b) A part of the research question  
(c) A strategy of evaluating data  
(d) A tentative statement providing an explanation
8. Case studies are  
(a) Studies conducted in areas of genetics and microbiology  
(b) In-depth examination of a subject and its related conditions  
(c) A report on the existing socio political condition  
(d) Specialized research in the areas of health and sanitation

9. Which of the following is the key behaviour contributing to effective teaching?
- Summarising what was told by a student
  - Encouraging students to elaborate on an answer
  - Using direct and indirect questioning
  - Explaining concepts in a logical step by step presentation
10. Instructions which encourage live participation and interaction through online classes are called
- Synchronous instructions
  - Asynchronous instructions
  - Traditional instructions
  - Theoretical instructions

**Direction for questions 11 to 15:**

Read the following passage and answer questions.

Perhaps what bothered the media in the 1970s was the shift in liberty being suggested. For centuries, journalists had operated on the basis of negative liberty, or freedom from external restraints. Suddenly, however, the thrust was positive freedom, a freedom for pursuit of some predetermined goals. This new social responsibility seems grounded on a school of thought that sees negative liberty as insufficient and ineffective, somewhat like telling people they are free to walk without first making sure they are not crippled. Who better than the government is able to provide humanity with appropriate means? Government, even a democratic government, is seen by social responsibility adherents as the any-force strong enough to guarantee effective operation of freedom. This does not mollify observers who find social responsibility to be only a slightly disguised version of authoritarianism. Media philosopher John Merrill has been one of the most outspoken critics of the theory. To him, the proposition that pluralism of ideas should be governmentally mandated is ludicrous. Journalists, he says, must retain their freedom to make their own news and editorial judgements. Even well intentioned attempts by outside groups seeking media improvement are self-serving, and inevitably lessen the autonomy of journalists, Merrill maintains. This leads us to the issue of media autonomy.

11. What was the basis of the operation of journalists earlier?
- Freedom of limited choices
  - Social responsibility

- Free from outside pressure
  - Government control
12. Some scholars consider social responsibility aspect of media as
- Negative freedom
  - Pluralism
  - Democratisation of media
  - Authoritarianism
13. Positive freedom means
- Grounded thought
  - Pursuing certain set goals
  - Freedom with conditions
  - Providing identified means
14. The passage critically analyses
- Operation of journalists
  - Mandate for government
  - Social responsibility theory of media
  - Regimented autonomy of journalists
15. According to John Merrill, seeking improvement in media, is
- Appropriate
  - Well-intentioned
  - Inevitable
  - Self-serving
16. Given below are two premises with four conclusions drawn from them. Which of the following conclusions could be validly drawn from the premises?
- Premises:**
- All cats are dogs
  - All dogs are cows
- Conclusions:**
- All cats are cows
  - Some cows are cats
  - All dogs are cats
  - No cow is dog
- Select the correct answer from the options given below:
- 2, 3 and 4
  - 4 only
  - 1 and 2
  - 2 and 4
17. Manoj's commission is 10% of all sales upto ₹ 10,000 and 5% on all sales exceeding this. He remits ₹ 75,500 to his company after deducting his commission. The total sales will come out to be
- ₹ 78,000
  - ₹ 80,000
  - ₹ 85,000
  - ₹ 90,000
18. In which method of arriving at knowledge the emphasis is on both proceeding from particular to general and from general to particular in a combined way?
- Inductive method
  - Deductive method

- (c) Scientific method  
(d) Analogical method
19. Choose the missing term out of the given alternatives: QPO, NML, KJI, \_\_\_\_ .  
(a) HGF (b) CAB  
(c) JKL (d) GHI
20. In the communication process, signs derive meanings through  
(a) The subjectivity of various components  
(b) The objectivity of the decoder  
(c) The network of inter-relations  
(d) The neutrality of the channel
21. The simple interest on a certain sum of money for 3 years at 4% per annum is half the compound interest on ₹ 2,000 for 2 years at 10% per annum. The sum invested on simple interest is  
(a) ₹ 8,750 (b) ₹ 1,750  
(c) ₹ 2,500 (d) ₹ 3,500
22. Communication through colours can result in  
1. Aesthetic codes 2. Cultural codes  
3. Semantic codes 4. Binary codes  
Choose the correct answer from the options given below:  
(a) 1 and 4 (b) 2 and 3  
(c) 2 and 4 (d) 1 and 2
23. Identify the reasoning in the following arguments:  
'A pilot without flight plans is like an artist without paints.'  
(a) Analogical (b) Deductive  
(c) Inductive (d) Hypothetical
24. If proposition 'some milk is curd' is taken to be true then which of the following propositions can be false?  
(a) No milk is curd  
(b) All milk is curd  
(c) Some curd is milk  
(d) Some milk is not curd
25. **Assertion (A):** Media entertainment does not enhance the cultural level of society.  
**Reason (R):** Most media entertainment encourages escapism, not content quality  
Choose the correct answer from the options given below:  
(a) Both (A) and (R) are true, and (R) is the correct explanation of (A)  
(b) Both (A) and (R) are true, but (R) is not the correct explanation of (A)  
(c) (A) is true, but (R) is false  
(d) (A) is false, but (R) is true
26. Language of communication also constitutes  
(a) The random world  
(b) The divine world  
(c) The social world  
(d) The unsanctified world
27. The proposition 'some trees are green' is equivalent to which of the following propositions?  
1. Many trees are green  
2. Some green things are trees  
3. Some green things are not non-trees  
4. Trees are usually green  
(a) 1, 2, 3 and 4 (b) 2 and 4  
(c) 1 only (d) 3 and 4
28. The sum of all even natural numbers between 1 and 81 is  
(a) 3280 (b) 3321  
(c) 1646 (d) 1640
29. Connotative communication inside the classroom is  
(a) Direct (b) Critical  
(c) Implicit (d) Explicit
30. In a bag, there are coins of 5 ps, 10 ps and 25 ps in the ratio of 3:2:1. If there are ₹ 60 in all, how many 5 ps coins are there?  
(a) 100 (b) 200  
(c) 300 (d) 400

**Direction for question 31 to 35:**

Consider the following two tables (I and II) that show the percentage wise distribution (%) of the number of laptops sold by a shopkeeper during a period of six months from April to September 2018 and the ratio between the number of laptops sold of brand HP (H) and brand DELL (D) during the same six months. A total of 45000 laptops have been sold during these six months. Study these tables I and II and answer the questions that follow:

I. Sale of Laptops Month wise		II. Laptops Brand Ratio		
Name of Month	% of Laptops	Name of Month	Ratio	
April	17		H	D
May	22	April	8	7
June	25	May	4	5
July	8	June	3	2
August	12	July	7	5
September	16	August	7	8
		September	7	9



31. If 35% of the laptops sold of brand H during August were sold at a discount, how many laptops of brand H during that month were sold without a discount?  
 (a) 882 (b) 1635  
 (c) 1638 (d) 885
32. What is the total number of laptops sold of brand D during May and June together?  
 (a) 9500 (b) 10000  
 (c) 10500 (d) 15000
33. What is the ratio of the number of laptops sold of brand D during April to those sold during September of the same brand?  
 (a) 119 : 145 (b) 116 : 135  
 (c) 119 : 135 (d) 119 : 130
34. If the shopkeeper earned a profit of Rs. 434 on each laptop sold of brand D during July, what was his total profit earned on the laptops of that brand during the same month?  
 (a) ₹ 6,51,900 (b) ₹ 6,46,500  
 (c) ₹ 6,49,500 (d) ₹ 6,51,000
35. The number of laptops sold of brand H during April is approximately what percent of the number of laptops sold of brand H during September?  
 (a) 110 (b) 140  
 (c) 130 (d) 150
36. Which one of the following universities is not among the first three that were established during 1857?  
 (a) Calcutta (b) Bombay  
 (c) Delhi (d) Madras
37. Which of the following is an example of proprietary system software?  
 (a) Linux  
 (b) Microsoft Internet explorer  
 (c) Microsoft office  
 (d) Microsoft windows
38. Consider the following statements in the context of Millennium Development Goals (MDGs) adopted by the United Nations
1. Eradicate extreme poverty and hunger
  2. Improve maternal health
  3. Responsible consumption and production
  4. Reduce child mortality
- Choose the correct answer from the options given below:  
 (a) 1, 2 and 3 (b) 2, 3 and 4  
 (c) 1, 2 and 4 (d) 1, 3 and 4
39. Which one of the following coordinates, promotes and funds research activities of all social science disciplines?  
 (a) ICPR, New Delhi  
 (b) IAS, Shimla  
 (c) ICSSR, New Delhi  
 (d) NUEPA, New Delhi
40. With respect to computers, which one of the following best describes phishing?  
 (a) A malicious program installed on a system that stays concealed to avoid detection  
 (b) A method of bypassing normal authentication procedure over a connection to a network  
 (c) A type of unsolicited bulk email of identical messages sent to numerous recipients  
 (d) An attempt to acquire sensitive information for malicious reasons by masquerading as a trustworthy entity
41. Which of the following disasters belongs to the category of nuclear disasters?  
 1. Fukushima disaster  
 2. Chernobyl disaster  
 3. Three mile Island incident  
 4. The love canal disaster
- Choose your answer from the options given below:  
 (a) 1, 2 and 3 (b) 1, 2 and 4  
 (c) 1, 3 and 4 (d) 2, 3 and 4
42. **Statement I:** Most of the member countries in the International solar Alliance are located between the tropic of cancer and tropic of Capricorn
- Statement II:** Japan is a member country of the International solar alliance.
- Which of the above statements is/are correct?  
 (a) I only (b) II only  
 (c) Both I and II (d) Neither I nor II
43. In which of the following Ancient Indian universities, the culture and civilization of Tibet was built mainly through the writings of the schools?  
 (a) Nalanda (b) Vikramshila  
 (c) Jagaddala (d) Mithila
44. The Paris Agreement aims to limit the temperature rise in this century by how many degrees Celsius above the pre-industrial levels?  
 (a) 1°C (b) 2°C  
 (c) 0.5°C (d) 3°C

45. Jatin's laptop has a LCD screen. The acronym LCD stands for:
- (a) Light Crystal Display
  - (b) Liquid Compact Display
  - (c) Light Compact Display
  - (d) Liquid Crystal Display
46. **Assertion (A):** Night time temperatures in the central parts of a city are generally higher than those over the surrounding rural areas.
- Reason (R):** Radiation losses over the urban areas are less than that over the rural areas.
- Choose the correct answer from the options given below:
- (a) Both (A) and (R) are true and (R) is the correct explanation of (A)
  - (b) Both (A) and (R) are true but (R) is not the correct explanation of (A)
  - (c) (A) is true but (R) is false
  - (d) (A) is false but (R) is true
47. A special focus on the problems of the examination system of India formed a part of which one of the following reports?
- (a) Report of the Calcutta university commission
  - (b) Report of the University Education Commission (1964-1966)
  - (c) Hartog committee report
  - (d) Report on standards of University education UGC (1965)
48. "Gyanvani" launched by IGNOU to cover the educational needs of India refers to
- (a) Satellite based educational T.V. channel
  - (b) Educational F.M. Radio network
  - (c) Global initiative of academic networks
  - (d) MOOCs
49. Why would BCC: be used in an E-mail/email?
- (a) BCC: allows the recipient to identify all the other recipients in the list when a group email address is used
  - (b) BCC: allows the sender to indicate who the email is for if there is more than one recipient
  - (c) BCC: allows the sender of a message to conceal the recipient entered in the BCC: field from the other recipients
  - (d) BCC: allows recipients to be visible to all other recipients of the message
50. A computer network which is used within a building is called a
- (a) WAN
  - (b) MAN
  - (c) LAN
  - (d) SAN



## Answer Key

Q.No.	Answer	Topic's Name	Chapter's Name
1	c	Evaluation systems	Teaching aptitude
2	a	Types of research	Research aptitude
3	c	Learner characteristics	Teaching aptitude
4	c	Methods of data collection	Research aptitude
5	d	Evaluation systems	Teaching aptitude
6	d	Article writing	Research aptitude
7	d	Steps of research	Research aptitude
8	b	Methods of research	Research aptitude
9	d	Factors affecting teaching	Teaching aptitude
10	a	Methods of teaching	Teaching aptitude
11	c	Fact based	Comprehension
12	d	Inferential based	Comprehension
13	b	Fact based	Comprehension
14	c	Inferential based	Comprehension
15	d	Fact based	Comprehension
16	c	Syllogism	Logical reasoning
17	b	Proportion and percentage	Mathematical aptitude
18	c	Deductive and inductive reasoning	Logical reasoning
19	a	Alphabet series	Mathematical aptitude
20	c	Types of communication	Communication
21	b	Interest	Mathematical aptitude
22	d	Non-verbal communication	Communication
23	a	Analogies	Logical reasoning
24	a	Arguments and propositions	Logical reasoning
25	a	Mass media	Communication
26	b	Society	Communication
27	a	Arguments and propositions	Logical reasoning
28	d	Number series	Mathematical aptitude
29	c	Classroom communication	Communication
30	c	Ratios	Mathematical aptitude
31	c	Data interpretation	Data interpretation
32	b	Data interpretation	Data interpretation
33	c	Data interpretation	Data interpretation
34	d	Data interpretation	Data interpretation
35	c	Data interpretation	Data interpretation
36	c	Higher education in ancient India	Higher education system
37	d	Components of computer	Information and communication technology
38	c	Millenium development goals	People, development and environment
39	c	Governance	Higher education system
40	d	Terminology	Information and communication technology

41	a	Nuclear disasters	People, development and environment
42	c	International Solar alliance	People, development and environment
43	b	Higher education in ancient India	Higher education system
44	b	Paris Agreement	People, development and environment
45	d	Abbreviations	Information and communication technology
46	a	Anthropogenic activities and their impact on environment	People, development and environment
47	d	Educational reports	Higher education system
48	b	Non-conventional learning programmes in India	Higher education system
49	c	E-Mail	Information and communication technology
50	c	Basics of internet and intranet	Information and communication technology

**ANSWERS WITH EXPLANATIONS**

- Option (c) is correct.**  
Diagnostic evaluation is the evaluation which is done while learning to know difficulties and deficiencies of learner in learning process.
- Option (a) is correct.**  
Qualitative research method involves collection, analysis and interpretation of qualitative or non-numeric data. This will include study of behaviour, reactions, beliefs, attitudes, etc.
- Option (c) is correct.**  
Abstraction is an depth understanding of an idea and not just an event or situation. Concepts and abstraction both are based on the experience of an individual and mostly can be generalized.
- Option (c) is correct.**  
Tertiary source is a compilation or index of primary and secondary sources both. It is basically the synthesis of primary and secondary sources. Examples can be dictionaries, encyclopaedia, etc.
- Option (d) is correct.**  
An evaluation plan will describe how you will monitor and assess any project or assignment. It will normally include the purpose of evaluation, resources available for evaluation, and tools of analysis.
- Option (d) is correct.**  
Position paper is compiled to put forward an opinion or position in relation to any ongoing issue. It is basically an argument for or against any topic and its goal is to convince an audience.
- Option (d) is correct.**  
Hypothesis is a statement about an expected result or assumptions about an outcome. It is set at the beginning of study. Researcher will test the set hypothesis and prove it to be right or wrong.
- Option (b) is correct.**  
Case study is a method in which researcher will investigate an event, situation, person or institute. They will identify the major areas of concern in that case and try to understand the reason for that.
- Option (d) is correct.**  
The basic foundation of ensuring effective teaching will be identifying the logical step by step sequence of the theory being discussed and explaining it to learners in the best possible manner.
- Option (a) is correct.**  
Synchronous instructions involve any type of learning where teacher and students are present at the same place and discussions are possible. It can be either online classes or traditional offline classes.
- Option (c) is correct.**  
According to the paragraph, earlier journalists operated on the basis of negative liberty or free from external pressure. The shift from this thought of school is something that troubled the media in the 1970s.
- Option (d) is correct.**  
According to the paragraph, Scholars like John Merrill consider the social responsibility driven media as authoritarian and self-serving. He says it decreases the autonomy of the media.
- Option (b) is correct.**  
According to the paragraph, Positive freedom means freedom of the media to follow a pre-set goal. This concept sees negative liberty as lacking effectiveness.
- Option (c) is correct.**  
The passage critically analysis the concept of social responsibility driven journalists and

media. It discusses the belief where autonomy of media is considered as a negative freedom.

**15. Option (d) is correct.**

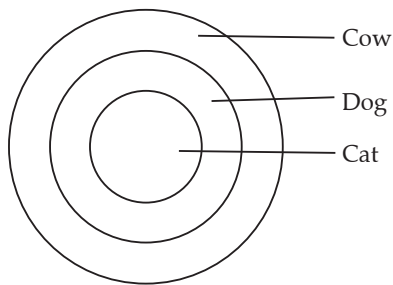
According to John Merrill, aiming for any changes or improvement in media from its current form, is self-serving and something that will decrease the autonomy of media.

**16. Option (c) is correct.**

We have two statements

All cats are dogs.

All dogs are cows.



Considering above statements, we can conclude that,

All cats are cows.

Some cows are cats.

**17. Option (b) is correct.**

Total sales = A

Manoj's commission will be:

$10000 \times 10/100 = 1000$ , and,

$(A-10000) \times 5/100 = (A-10000) \times 0.05 = 0.05A - 500$

Hence,

$$A - 75500 = 1000 + 0.05A - 500$$

$$A - 0.05A = 1000 - 500 + 75500$$

$$A - 0.05A = 76000$$

$$A(1 - 0.05) = 76000$$

$$0.95A = 76000$$

$$A = 76000/0.95 = 80000$$

**18. Option (c) is correct.**

In scientific method of reasoning the theories are developed to explain any concept. These theories are constructed through trial and error methods by using both inductive and deductive reasoning.

**19. Option (a) is correct.**

The alphabets in the series are written in reverse order like, QPO is in reverse order. Also, the entire series of alphabets is written backwards. So, the correct option is HGF.

**20. Option (c) is correct.**

The language or any other medium of communication is developed due to inter relationships and networking of people. Sign has a meaning because people learn that meaning from each other due to a network of inter relations.

**21. Option (b) is correct.**

$$\begin{aligned} \text{Compound Amount (A)} &= P \left( 1 + \frac{R}{100} \right)^n \\ &= 2000 \left( 1 + \frac{10}{100} \right)^2 \\ &= 2000 \times (1.1)^2 \\ &= 2000 \times 1.21 \end{aligned}$$

$$A = 2420$$

$$\text{Compound Interest CI} = A - P = 420$$

$$\text{Simple interest} = (P \times R \times T)/100$$

$$= \frac{P \times 3 \times 4}{100}$$

According to the problem

$$\frac{\text{CI}}{2} = \text{SI}$$

$$\text{SI} = 420/2$$

$$= P \times 3 \times 4/100$$

$$210 = P \times 3 \times 0.04$$

$$210 = P \times 0.12$$

$$P = 210/0.12 = 1750$$

**22. Option (d) is correct.**

Aesthetic codes represent various art forms like painting, sculptures, dancing, music, etc. Cultural codes represent signs, symbols, etc that carry a special meaning for the people of a particular community.

**23. Option (a) is correct.**

Analogical reasoning is a way of thinking that believes if two things are similar in a certain way, then they will be similar in future. Hence any thing that is true for one will be true for another also.

**24. Option (a) is correct.**

Considering the statement "Some milk is curd" to be true, then the statement "No milk is curd" can never be true. At least some part of the milk will be curd.

**25. Option (a) is correct.**

Statement a is Media entertainment does not the culture level of society. The correct reason for such a phenomenon can be that media

entertainment promotes distraction from reality and does not provide quality content.

**26. Option (b) is correct.**

Societal factors play an important role in the process of communication and the process of development of language used by people in a society.

**27. Option (a) is correct.**

Statement "some trees are green" can be related to all four statements in the option.

**28. Option (d) is correct.**

Total even number from 1 to 81 = 40

Sum of even numbers =  $N/2 (F+L)$

$N = 40, F = 2, L = 80$

Sum =  $40/2 (2+ 80)$

Sum = 1640

**29. Option (c) is correct.**

Connotative communication is the use of words which suggest some different meaning rather than its literal meaning. Like the term blue represents sadness and sometimes fear.

**30. Option (c) is correct.**

If total coins = 6A

5 ps coins =  $3A \times 5/100 = ₹ 0.05 \times 3A$

10 ps coins =  $2A \times 10/100 = ₹ 0.1 \times 2A$

25 ps coins =  $1A \times 25/100 = ₹ 0.25 \times 1A$

$0.25A + 0.2A + 0.15A = 60$

$A = 100$

Total coins = 600

5 ps coins = 300

**31. Option (c) is correct.**

Total Laptop sold in six months = 45000

Laptop sold in August =  $45000 \times 12/100 = 5400$

Ratio of laptop sold in August = 7:8

No. of laptop sold by H in August =  $5400 \times 7/15 = 2520$

Laptop sold without discount =  $2520 \times 65/100 = 1638$

**32. Option (b) is correct.**

Total Laptop sold in six months = 45000

Laptop sold in May =  $45000 \times 22/100 = 9900$

Laptop sold by D in May =  $9900 \times 5/9 = 5500$

Laptop sold in June =  $45000 \times 25/100 = 11250$

Laptop sold by D in June =  $11250 \times 2/5 = 4500$

Total Laptop sold by D in May and June = 10000

**33. Option (c) is correct.**

Total Laptop sold in six months = 45000

Laptop sold in April =  $45000 \times 17/100 = 7650$

Laptop sold by D in April =  $7650 \times 7/15 = 3570$

Laptop sold in September =  $45000 \times 16/100 = 7200$

Laptop sold by D in September =  $7200 \times 9/16 = 4050$

Ratio will be 3570:4050 = 119:135

**34. Option (d) is correct.**

Total Laptop sold in six months = 45000

Laptop sold in July =  $45000 \times 8/100 = 3600$

Laptop sold by D in July =  $3600 \times 5/12 = 1500$

Total profit of shopkeeper =  $1500 \times 434 = 651000$

**35. Option (c) is correct.**

Total Laptop sold in six months = 45000

Laptop sold in April =  $45000 \times 17/100 = 7650$

Laptop sold by H in April =  $7650 \times 8/15 = 4080$

Laptop sold in September =  $45000 \times 16/100 = 7200$

Laptop sold by D in September =  $7200 \times 7/16 = 3150$

Percentage will be =  $4080/3150 \times 100 = 130$

**36. Option (c) is correct.**

Delhi University was established in 1922.

Calcutta University was established on January 24, 1857.

Bombay University was established on July 18, 1857.

Madras University was established on September 5, 1857.

**37. Option (d) is correct.**

Proprietary software is the software which is the copyright of any company or individual. There is a restriction on production and distribution of such software. Users have to buy proprietary software against a certain sum of money. Users have to buy Microsoft Windows legally to install it.

**38. Option (c) is correct.**

The eight Millennium development goals of the UN include control on extreme poverty, HIV/AIDS, ensure Maternal health, reduce child mortality, Gender equality, Universal primary education, Environmental sustainability, and Global partnership for development.

**39. Option (c) is correct.**

The ICSSR, Delhi provides funds, grants, fellowships for projects in social science. It also

looks after the publications, collaborations, etc. in the field of social science.

**40. Option (d) is correct.**

Phishing is an activity of sending fraudulent messages usually through emails to people with the objective of getting any kind of sensitive information like login details or card and bank details. It is a very common type of cyber-attack.

**41. Option (a) is correct.**

The Fukushima nuclear disaster occurred in 2011 at the Fukushima nuclear power plant in Japan.

The Chernobyl nuclear disaster occurred in 1986 at the Chernobyl nuclear power plant in Ukraine.

The three-mile island disaster occurred in 1979 due to the meltdown of a reactor at a nuclear generating station in Pennsylvania.

The Love Canal disaster was an environmental disaster of the 1970s due to improper landfill near Niagara Falls, USA.

**42. Option (c) is correct.**

International solar alliance is a group of 124 countries have plenty of sunshine. This alliance is the initiative of India with headquarters at Gurugram. The objective is to promote clean energy and a sustainable environment.

**43. Option (b) is correct.**

Vikramshila University was built in the 8th century by ruler Dharmapala. It was among the main centres for Buddhist learning.

**44. Option (b) is correct.**

The Paris agreement aims to limit the global temperature increase in the century to 2°C. Its goal is to control greenhouse gas emission along with the promotion of other sustainable practices.

**45. Option (d) is correct.**

The full form of LCD is Liquid Crystal Display.

**46. Option (a) is correct.**

The city centre at night is warm in comparison to its surroundings. The buildings and other infrastructure absorb more solar energy than soils and fields. Also, evaporation is less in urban areas. Radiative losses are less in Urban areas in comparison to rural areas.

**47. Option (d) is correct.**

The report on standards of university education was published in 1965 by UGC. Its aim was to promote and coordinate University education along with ensuring the standards of teaching, research and evaluation in universities.

**48. Option (b) is correct.**

Gyanvani is an educational FM station of IGNOU which provides an interactive platform to the students. It was launched in March 2000.

**49. Option (c) is correct.**

BCC means blind carbon copy. The recipients whose email is entered in BCC will not be able to check other recipients in the BCC of the email.

**50. Option (c) is correct.**

Local area network is a network which connects the computers within the small area like a residential complex, company, etc.





# UGC NET PAPER-1

## GENERAL APTITUDE

# Solved Paper December 2018

Time Allotted: 1 Hour

Maximum Marks: 100

### Important Instructions:

- Each question carries 2 marks.
- This paper consists of fifty (50) multiple-choice type of questions.
- Each item has four alternative responses marked (a), (b), (c) and (d). You have to darken the oval as indicated below on the correct response against each item.  
**Example:** where (c) is the correct response.
- Your responses to the items are to be indicated in the **Answer Sheet**.
- Use of any calculator or log table etc., is prohibited.**
- Negative Marking:** For each incorrect answer 0.5 marks shall be deducted.

- Identify those stages/steps of research in which ethical considerations become relevant. Choose from the code to give your answer.
  - Identifying and defining research question.
  - Postulating relationships among variables to advance a solution.
  - Collecting data through use of research tools.
  - Defining the population and sampling procedure.
  - Data analysis and procedure employed.
  - Reporting procedure of findings/results.

(a) 3, 5 and 6                      (b) 2, 3 and 4  
(c) 1, 2 and 3                      (d) 2, 3 and 6
- In the two sets given below, Set-I specifies the methods of research while Set-II describes the critical feature associated with a method of research. Match the two and select from the code to indicate your answer.

Set-I (Research methods)	Set-II (Critical features associated)
(a) Experimental method	(i) Generalizing to the population from a large sample
(b) Ex post facto method	(ii) Establishing the patterns of events which have happened, through primary and secondary sources

(c) Historical method	(iii) Studying shared behaviour patterns
(d) Ethnographic method	(iv) Establishing cause and effect through control
	(v) Probing into the causal factors from the observed effects

### Code:

- |         |       |       |       |
|---------|-------|-------|-------|
| (a)     | (b)   | (c)   | (d)   |
| 1. (iv) | (v)   | (ii)  | (iii) |
| 2. (i)  | (ii)  | (iii) | (iv)  |
| 3. (ii) | (i)   | (iv)  | (iii) |
| 4. (ii) | (iii) | (iv)  | (v)   |
- The paradigm of research which focuses on the development of professional expertise of the researcher-practitioner is called:
    - Pure research
    - Applied research
    - Action research
    - Qualitative research
  - For organizing an effective teaching-learning system, which of the following combinations of statements would reflect the most appropriate concern? Select from the code to indicate your answer.
    - Determining what will be the intended learning outcome.
    - Deciding as to what strategy and tactics will be used.

3. Formally approving the academic qualifications of teachers.
4. Determining the evaluation tool to be used.
5. Deciding the size of the classroom.
6. Assessing the prior academic experience of the learner.
- (a) 1, 2, 3 and 4                      (b) 1, 3, 4 and 5  
(c) 1, 2, 4 and 6                      (d) 3, 4, 5 and 6
5. In order to promote direct learning, which of the following methods would be best suited?
- (a) Lecture with examples  
(b) Project method  
(c) Discussion session  
(d) Team teaching method
6. From the following list of learner characteristics identify those which will be helpful in ensuring effectiveness of teaching. Select your answer from the code.
- Extent to which learner obeys the school rules
  - Learner's level of motivation
  - Feelings of learners towards the social system
  - Learner's interest in sports and games
  - Prior experience of the learner
  - Interpersonal relations of learners
- (a) 2, 5 and 6                      (b) 3, 4 and 5  
(c) 1, 3 and 5                      (d) 1, 2 and 3
7. Which devices from the list given below will form part of formative evaluation? Give your answer by selecting from the code.
- Conducting a quiz session
  - Giving multiple-choice type questions in post-instructional sessions
  - Giving a master test
  - Providing corrective feedback during discussions
  - Encouraging opportunity for metacognitive thinking
  - Grading students' performance on a five-point scale
- (a) 4, 5 and 6                      (b) 2, 3 and 4  
(c) 1, 2 and 3                      (d) 1, 4 and 5
8. Below are given a number of key behaviours as well as helpful behaviours of effectiveness of teaching based on research evidence. Identify those which are key behaviours and indicate your answer by selecting from the code.
- Structuring through comments by the teacher in respect of what is to come.
  - Questioning through content and process level questions.
  - Lesson clarity implying the extent to which presentations are not involved.
  - Probing which implies statements to encourage students to elaborate.
  - Engagement rate devoted to learning when students are actually on task.
  - Rate at which students understand and correctly comprehend assignments and exercises.
- (a) 2, 3 and 4                      (c) 3, 5 and 6  
(b) 1, 4 and 5                      (d) 2, 4 and 5
9. Which of the following statements best reflect the meaning and characteristics of research? Select from the code to give your answer.
- Research means challenging the status quo.
  - Research is an endeavour to collect facts and information.
  - Research is a synthesis of deductive and inductive processes.
  - Research means proving one's assertions and beliefs.
  - Research is a careful review of reported studies.
  - Research is a critical and passionate search for knowledge.
- (a) 1, 5 and 6                      (b) 2, 4 and 5  
(c) 1, 3 and 6                      (d) 1, 2 and 3
10. In the two sets given below, Set-I provides the format of presentation and Set-II gives the distinct features to go with them. Match the two sets and select from the code to indicate your answer.

Set-I (Format of presentation)	Set-II (Distinctive features)
(a) Thesis/dissertation	(i) Based on free-wheeling of ideas
(b) Research paper	(ii) Target oriented group based reflection
(c) Workshop	(iii) Reflective deliberations based on specific themes
(d) Seminar	(iv) Presentation on a summary of research done
	(v) Systematic prescribed format

**Code:**

- |    | (a)   | (b)   | (c)   | (d)   |
|----|-------|-------|-------|-------|
| 1. | (iii) | (i)   | (ii)  | (v)   |
| 2. | (ii)  | (iii) | (iv)  | (v)   |
| 3. | (v)   | (iv)  | (ii)  | (iii) |
| 4. | (i)   | (ii)  | (iii) | (v)   |

**Direction for questions 11 to 15:**

Read the following passage carefully and answer the questions.

One of the findings of the research into successful leadership is the fact that respect is always a two-way street. No matter how powerful you are, no matter what your experience, skills, and accomplishments, you will not be respected by others if you consistently treat them disrespectfully. Friendliness - that is, treating others politely and showing interest in them - is a way of showing your respect for other people, and in return they respect you. If as a manager you are respected, your preventive maintenance strategy will be accepted as a sincere attempt to resolve problems rather than a mean-spirited attempt to cause problems.

As important as friendliness is, I want to make sure you are not misled into believing that friendliness will replace or correct poor management. I have seen effective managers who didn't use this friendliness element but could have been more effective if they did use it. I have seen very friendly managers who were ineffective because they were not doing effective management things. In other words, managers who intervene effectively in a friendly way are always more effective than managers who intervene effectively in a non-friendly way. Maintaining a friendly relationship is another part of maintaining work performance. It also helps you avoid having people try to hurt you because they don't like you. It might save your life.

11. The preventive maintenance strategy used by a respected manager will mean to the subordinates:
- An attempt to become mean-spirited
  - An attempt to cause problems
  - An attempt to become sincere
  - An attempt to resolve problems
12. The passage highlights which of the following features of a successful leadership?
- Dependence of the leader
  - Reciprocity of the leader
  - Independence of the leader
  - Least concern for relationship by the leader
13. The central idea of the passage is:
- Friendliness improves work-ethos.
  - Friendliness avoids chances of feeling hurt.
  - Friendliness is a negative factor for management
  - Friendliness is necessary for management.
14. What is reported in respect of successful leadership?
- Respect depends on the accomplishments of the leader.
  - Respect depends on experience of the leadership
  - Respect depends on the skills of the leadership
  - Respect comes out of respect.
15. According to the passage friendliness in management terms implies:
- Making management ineffective
  - Replacing poor management
  - Correcting ineffective management
  - Making management effective
16. Which of the following is a powerful determinant for effective assertive communication whether written or spoken?
- 'I' messages
  - 'We' messages
  - 'They' messages
  - 'You' messages
17. The number of marble slabs of size 20 cm × 30 cm required to pave the floor of a square room of side 3 meters is:
- 100
  - 225
  - 25
  - 150
18. In the sequence of numbers 2, 8, 26, 62, 122, 212,  $x$ , ....., the term  $x$  is:
- 338
  - 248
  - 332
  - 302
19. Given below is a statement followed by three assumptions made from it. Which assumptions are implicit in the context of the given statement? Select the correct answer from the code given below.
- Statement:** 'Smoking is injurious to health.' A warning printed on the cigarette packets.
- Assumptions:**
- People read printed matter on a cigarette packet.
  - People make careful note of a warning.
  - Non-smoking promotes health.
- 1 only
  - 2 and 3
  - 1 and 2
  - 2 only

20. In conveying the same meanings, which of the following is incongruous?  
 (a) Flourish (b) Thrive  
 (c) Excite (d) Prosper
21. A teacher decides to form six groups of students and assigns a sub-theme to each group for discussion and reporting. Which kind of communication model will best describe his/her strategy in this regard?  
 (a) Transactional model  
 (b) Horizontal model  
 (c) Linear model  
 (d) Interactional model
22. Five persons Amit, Anil, Ajay, Atul and Anand live in a five storey building on different floors. Amit lives above Ajay but below Anand. Atul lives above Ajay but below Amit. Anil lives below Anand but above Atul. On which floor does Anil live?  
 (a) Second floor  
 (b) Fourth floor  
 (c) Third floor  
 (d) Either third floor or fourth floor
23. ₹ 9000 were divided among a certain number of persons. Had there been 20 more persons, each would have got ₹ 160 less. The original number of persons was:  
 (a) 30 (b) 45  
 (c) 55 (d) 25
24. Which of the following constitute the paralanguage in communication? Select from the code to indicate your answer.  
 1. Pitch of the voice  
 2. Internal noise  
 3. External noise  
 4. Use of pauses  
 5. Rate and volume of speech  
 (a) 1, 4 and 5 (b) 1, 2 and 5  
 (c) 1, 2 and 3 (d) 2, 3 and 4
25. Which of the following would influence the effectiveness of communication in classroom instruction in a critical way?  
 (a) Academic intelligence and personality characteristics of the teacher  
 (b) Teaching style preferred by the teacher while transacting  
 (c) Teaching aids used by the teacher while making presentations  
 (d) Subject knowledge of the teacher
26. In communicating in a classroom situation which one of the following approaches will be considered most appropriate?  
 (a) Personal and emulative  
 (b) Assertive and conformist  
 (c) Technical and domineering  
 (d) Empathetic and pragmatic
27. In a certain code, LIFE is written as KMHJEGDF. How is WORD written in that code?  
 (a) XVPNSQEC (b) VXNPQSEC  
 (c) XVPNSQCE (d) VXNPQSCE
28. Given below are two premises with four conclusions drawn from them (taken singly or together). Which conclusions are valid drawn? Select the correct answer from the code given below.  
**Premises:** (i) All politicians are honest persons.  
 (ii) All honest persons are fair.  
**Conclusions:** 1. Some honest persons are politicians.  
 2. No honest person is a politician.  
 3. Some fair persons are politicians  
 4. All fair persons are politicians.  
 (a) 2 and 4 only (b) 1 and 3 only  
 (c) 1, 2 and 4 (d) 2 and 3 only
29. In terms of the relationship indicated below, which word will correctly pair to replace the question mark (?)?  
 \_\_\_?\_\_\_ : play :: sing : song  
 (a) Field (b) Scene  
 (c) Act (d) Theatre
30. Mr. Rajesh, his sister, his son, and his daughter are fond of golf and often play together. The following statements are true for all the four:  
 1. The best player's twin and worst player are of the opposite sex.  
 2. The best player and the worst player are of the same age.  
 Assuming that both twins are members of the group of four, who is the best player?  
 (a) Sister of Mr. Rajesh  
 (b) Mr. Rajesh  
 (c) Daughter of Mr. Rajesh  
 (d) Son of Mr. Rajesh

**Direction for questions 31 to 35:**

Consider the following two tables (I and II) in which table I shows the percentage of students who joined and successfully completed the Ph.D. programme from the Universities A to G and table II shows the number of foreign Ph.D. students enrolled in the University C. These percentages have been rounded to the nearest whole number. There are a total of 855 Ph.D. students in the University C and a total of 5700 students successfully completed the Ph.D. programme from all the seven Universities together. In accordance with the tables I and II, answer the questions that follow.

**I. Students University-wise**

Name of University	% of students who joined Ph.D.	% of students who successfully completed Ph.D. (out of 5700)
A	22	18
B	15	17
C	10	13
D	17	16
E	08	09
F	12	15
G	16	12

**II. Foreign Ph.D. Students in University C**

Foreign Students	Number of Ph.D. students in University C
American	65
Australian	46
African	25
European	35

31. In case, there are 21 African students in University E, then approximately, what is their percentage in that University?  
 (a) 3% (b) 5%  
 (c) 4% (d) 2%
32. The number of students who completed the Ph.D. programme from Universities A and D together exceeds the number of students who joined the Universities C and E together, by:  
 (a) 399 (b) 304  
 (c) 278 (d) 369

33. What percentage of students in University C is that of foreign students?  
 (a) 30% (b) 15%  
 (c) 20% (d) 25%
34. Which University has the highest percentage of students who successfully completed the Ph.D. programme out of the students who joined that University?  
 (a) C (b) F  
 (c) E (d) B
35. What is the ratio of students who successfully completed the Ph.D. programme to the students who joined University G?  
 (a) 6:11 (b) 9:17  
 (c) 1:2 (d) 3:4
36. Which organisation in India oversees the functioning and quality aspect of teacher education programmes?  
 (a) University Grants Commission (UGC)  
 (b) National Council for Teacher Education (NCTE)  
 (c) National Council of Educational Research and Training (NCERT)  
 (d) Association of Indian Universities (AIU)
37. Which of the following activities/programmes in a University aims at Value Education in a holistic' frame?  
 (a) Yoga Education and Wellness Centres  
 (b) Inter-University Competitions  
 (c) Fine Arts and Musical Concerts  
 (d) National Cadet Corps (NCC)
38. Below are given two sets. Set-I mentions the types of pollution, while Set-II indicates their source. Match the two sets and select your answer from the code.

Set-I (Pollution Type)	Set-II (Source)
(a) Air	(i) Point and non-point sources such as discharges from industries etc.
(b) Land	(ii) Industries, thermal power plants and motor vehicles emissions.
(c) Water	(iii) Roadway, aircraft, industrial as well as high intensity sonar.
(d) Noise	(iv) Over use of chemical fertilizers.

**Code:**

	(a)	(b)	(c)	(d)
1.	(iv)	(iii)	(ii)	(i)
2.	(i)	(ii)	(iii)	(iv)
3.	(ii)	(iv)	(i)	(iii)
4.	(iii)	(i)	(ii)	(iv)

39. Mohan tells his friends, Sohan (sohan@gmail.com), Rohan (rohan@yahoo.com) and John (john@gmail.com), date of his birthday party through an email as shown below:

To	: sohan@gmail.com
Cc	: rohan@yahoo.com
Bcc	: john@gmail.com
Subject	: My Birthday Party is on 15/01/2019
Hello all,	
Call me if you can come.	
Mohan	

Which of the following cannot be derived from this email?

- (a) Sohan knows that the birthday party will be held on 15/01/2019.  
 (b) Sohan knows that Rohan receives the email.  
 (c) Rohan knows that John receives the email.  
 (d) John knows that both Sohan and Rohan receive the email.
40. Which of the following bodies/units in a University has a statutory function to perform?  
 (a) Finance Committee  
 (b) Board of Management  
 (c) Research Degree Committee  
 (d) Board of Studies
41. Using a word processing software, an image on page two of a document is to be repeated on page four of the same document. Which of the following would enable this to happen?  
 (a) Copy and Paste  
 (b) Find and Replace  
 (c) Cut and Paste  
 (d) Format and Replace
42. There are two sets given below. Set-I specifies the IT related acronyms, while Set-II indicates their functions. Match the two and give your answer by selecting the appropriate code.

Set-I (Acronyms)	Set-II (Functions)
(a) CPU	(i) Type of technology used on a flat-screen monitor.
(b) RAM	(ii) Controls all the functions performed by the computer's other components.
(c) ROM	(iii) Temporary storage, also known as primary storage.
(d) LCD	(iv) Permanent storage that is not erased when the computer's power is turned off.

**Code:**

- |    | (a)  | (b)   | (c)   | (d)  |
|----|------|-------|-------|------|
| 1. | (i)  | (iv)  | (iii) | (ii) |
| 2. | (ii) | (iii) | (iv)  | (i)  |
| 3. | (ii) | (iv)  | (iii) | (i)  |
| 4. | (i)  | (iii) | (iv)  | (ii) |
43. The gap between those individuals in a society who are computer literate and have access to information resources like the Internet and those who do not, is referred to as the \_\_\_\_\_.  
 (a) Terabyte divide  
 (b) Digital divide  
 (c) ICT divide  
 (d) Information overload
44. Which of the following provisions are directly covered in the Environment Protection Act, 1986?  
 (a) Prevention and control of water pollution  
 (b) Protection and conservation of forests and matters connected therewith  
 (c) Protection and improvement of quality of environment and preventing, controlling and abating environmental pollution  
 (d) Protection and safety of wild animals, birds and plants and for matters connected therewith
45. In the two sets given below. Set-I specifies H<sub>2</sub>S level in a water sample, while Set-II provides observations. Match the two sets and indicate your answer from the code given below:

Set-I (H <sub>2</sub> S level in Water Sample)	Set-II (Observation)
1. No H <sub>2</sub> S is produced	(i) Dark black-high water pollution
2. H <sub>2</sub> S is produced and is small in quantity	(ii) No colour-clean water
3. H <sub>2</sub> S is produced and is medium in quantity	(iii) Light black-low water pollution
4. H <sub>2</sub> S is produced and is high in quantity	(iv) Black-moderate water pollution

**Code:**

	<b>(a)</b>	<b>(b)</b>	<b>(c)</b>	<b>(d)</b>
1.	(iv)	(i)	(ii)	(iii)
2.	(ii)	(iii)	(iv)	(i)
3.	(i)	(ii)	(iii)	(iv)
4.	(iii)	(iv)	(i)	(ii)

46. Which of the following statements correctly describe the functions/status of the National Institute of Educational Planning and Administration for deemed to be University?

- Capacity building and research in planning and management of education
- Educational Planning and Administration
- Fully maintained by the Government of India like any Central University
- A Statutory Institute of Educational Planning and Administration

Select the correct answer from the code given below:

- (a) 2 and 4                      (b) 1 and 3  
(c) 1 and 2                      (d) 1 and 4

47. Which of the following statements are indicative of the vision of Blue-Revolution? For your answer select from the code:

- Promoting development of Botanical Gardens.
- Creating an enabling environment for the full potential of fisheries in the country.
- Improving the income status of fish farmers keeping in view the sustainability concerns.

- Encouraging scientific research in forestry to increase the vegetative cover.

- Promoting integrated development of fisheries of the country.

- Undertaking research in new areas like marine fish.

(a) 2, 3 and 5                      (b) 1, 2 and 3

(c) 1, 4 and 6                      (d) 3, 4 and 5

48. In the context of a School/University which of the following aspects of environment determine the academic ethos?

(a) Latest lab equipments

(b) Attractive physical campus

(c) Patterns of human relations as evident in workplace

(d) Well-equipped lecture halls

49. For promoting Human Values through programmes of the University System in India, which of the following activities have great potential?

(a) Association of NGOs

(b) Lectures by experts

(c) Inviting dignitaries/heads from national level organisations

(d) Mentoring by senior faculty members

50. In computer terminology, which of the following best describes a device driver?

(a) Software that allows interaction between peripheral devices and the operating system.

(b) Software that allows the user to control the operating system.

(c) Hardware that allows interaction between peripheral devices and the operating system

(d) Hardware that allows the user to control the operating system.

□□□

## Answer Key

Q.No.	Answer	Topic's Name	Chapter's Name
1	a	Research ethics	Research aptitude
2	a	Research methods	Research aptitude
3	c	Types of research	Research aptitude
4	c	Factors affecting teaching	Teaching aptitude
5	b	Methods of teaching	Teaching aptitude
6	a	Characteristics of a learner	Teaching aptitude
7	d	Evaluation system	Teaching aptitude
8	b	Effective teaching	Teaching aptitude
9	c	Meaning of research	Research aptitude
10	c	Terminology in research	Research aptitude
11	d	Inference based	Comprehension
12	b	Fact based	Comprehension
13	a	Fact based	Comprehension
14	d	Fact Based	Comprehension
15	d	Inference based	Comprehension
16	a	Effective communication	Communication
17	d	Area and Perimeter	Mathematical aptitude
18	a	Number series	Mathematical aptitude
19	c	Argument & Conclusion	Logical reasoning
20	c	Terminology	Logical reasoning
21	a	Models of teaching	Teaching aptitude
22	d	Direction & Seating Arrangement	Logical reasoning
23	d	Dividation	Logical Reasoning
24	a	Barriers of communication	Communication
25	b	Effective communication	Communication
26	d	Classroom communication	Communication
27	d	Coding & Decoding	Logical reasoning
28	b	Argument & Conclusion	Logical reasoning
29	c	Use of language	Logical reasoning
30	c	Deductive reasoning	Logical reasoning
31	a	Data interpretation	Data interpretation
32	a	Data interpretation	Data interpretation
33	c	Data interpretation	Data interpretation
34	a	Data interpretation	Data interpretation
35	c	Data interpretation	Data interpretation
36	b	Governance and administration	Higher education system
37	a	Value education	Higher education system
38	c	Type of pollution	People, development and environment
39	c	Email	Information and communication technology
40	b	Governance and administration	Higher education system



41	a	Computer Operations	Information and communication technology
42	b	Hardware & Software	Information and communication technology
43	b	Computer Literacy	Information and communication technology
44	c	Environmental protection act	People, development and environment
45	b	Pollutants	People, development and environment
46	b	Governance and administration	Higher education system
47	a	Sustainable development goals	People, development and environment
48	c	Environmental education	Higher education system
49	d	Value education	Higher education system
50	a	Terminology	Information and communication technology

**ANSWERS WITH EXPLANATIONS**

- Option (a) is correct.**

Ethical considerations while conducting any research has a major impact on the findings of the study. They become relevant mostly at the time of data collection, analysis and reporting the findings of the study.
- Option (a) is correct.**

Experimental method involves studying the variable in a controlled environment for establishing cause and effect relationships. Ex post facto research is done after the occurrence of an event or an incident to identify the causes of its occurrence. Historical research is done to study something which has happened in the past by using secondary and primary methods both. Ethnographic research is the study of common people in their existing environment by using various tools.
- Option (c) is correct.**

Action research is a study conducted by a person while working or being employed at a particular place to improve the present situations or methods.
- Option (c) is correct.**

For an effective teaching-learning process the organizer needs to accurately identify the expected outcome from the process, the process or strategies which will be followed, how the performance will be evaluated and what is the level of the learners.
- Option (b) is correct.**

Designing a well-structured project for learners will be the best tool to promote direct learning in students.
- Option (a) is correct.**

The key learner's characteristics to ensure an effective teaching learning process will be high motivation level in learners, past experience of learners and the kind of interpersonal dynamics among them.
- Option (d) is correct.**

Formative assessment includes various methods used by teachers to gauge the learning level of students and identify the gaps which need to be filled. Methods like quiz, providing feedback and using five-point scale are few good options.
- Option (b) is correct.**

Key behaviour for effective learning will include ensuring lesson clarity, engagement of students and understanding the rate at which students understand the exercises.
- Option (c) is correct.**

Research is challenging the existing concepts, breaking down concepts to reach a conclusion and passionate hunt for knowledge.
- Option (c) is correct.**

Thesis has a systematic format of writing. Research paper is normally a brief summary of any study being conducted. Workshop is conducted for enhancing knowledge in the group of audience. Seminars are conducted to encourage and create an insight into a topic through discussion among the experts of the field.
- Option (d) is correct.**

If a manager is respected by subordinates, then the preventive strategies will be considered as a sincere attempt to solve problems.
- Option (b) is correct.**

The passage highlights that if a leader will respect the subordinates, then he will receive respect from them.

- 13. Option (a) is correct.**  
Central idea of the passage is that friendliness on the part of a leader will improve the overall work environment.
- 14. Option (d) is correct.**  
According to the passage, respect comes from respect.
- 15. Option (d) is correct.**  
Friendliness in management means making good management better. By being friendly, an effective manager can be more effective.
- 16. Option (a) is correct.**  
Assertive communication means sharing an honest opinion in a powerful and respectful way. A person can take responsibility of their own actions without blaming others.
- 17. Option (d) is correct.**  
Area of the marble =  $20 \times 30 = 600 \text{ (cm)}^2$   
Side of square room = 3 meters = 300 cm  
Area of room =  $300 \times 300 = 90000 \text{ (cm)}^2$   
No. of marble required =  $90000/600 = 150$  Marbles
- 18. Option (a) is correct.**  
We will make 3 series to solve this question.  
In the first series: 2, 8, 26, 62, 122, 212 the difference in digits is:  
2nd series: 6, 18, 36, 60, 90; and in series no. 2 the difference in digits is:  
3rd Series: 12, 18, 24, 30; and in series 3 the difference in digit is of 6 between each digit.  
Now we will add numbers backwards. Hence, we need to add 6 in the last number of series no. 3 for next term which will be  $(30 + 6)$  i.e., 36.  
Add 36 to the last number of series no. 2 for the next number in that series. It will be  $90 + 36$  i.e., 126.  
Now add 126 to the last number of the first series to get next number of that series. It will be  $212 + 126$  i.e., 338.
- 19. Option (c) is correct.**  
From the statement we can assume that people will take warnings seriously and non-smoking will promote health.
- 20. Option (c) is correct.**  
Flourish, thrive and prosper all convey similar meaning. Only excite is different.
- 21. Option (a) is correct.**  
Transactional model of communication involves continuous communication or exchange of ideas between sender and receiver. The best example will be any type of face-to-face meeting.
- 22. Option (d) is correct.**  
From the question it is clear that Amit lives above Ajay and Atul but below Anand. Anil lives above Atul but below Anand. But it is not clear whether Anil lives above or below Amit.
- 23. Option (d) is correct.**  
Number of people = A  
Each will get =  $9000/A$   
If there were 20 more people =  $A + 20$   
Each will get =  $9000/(A + 20)$   
According to the problem  
 $9000/(A+20) = 9000/A - 160$   
 $160 = 9000/A - 9000/(A + 20)$   
 $160 = [9000(A+20) - 9000A]/A(A + 20)$   
 $160 = [9000A + 180000 - 9000A]/A(A + 20)$   
 $160 = 180000/A^2 + 20A$   
 $A^2 + 20A - 1125 = 0$   
 $(A + 45)(A - 25) = 0$   
Answer cannot be negative, hence 25 numbers.
- 24. Option (a) is correct.**  
Paralanguage are non-verbal elements of communication like tone, voice modulations, facial expression.
- 25. Option (b) is correct.**  
Classroom communication will be highly dependent on the style or method of teaching adopted by the teacher.
- 26. Option (d) is correct.**  
In classroom communication, an empathetic and practical style of teaching will be most effective. Understanding the problems faced by learners and trying to resolve them is the key.
- 27. Option (d) is correct.**  
For coding, the one prior and next alphabet of each alphabet is written. Like K L M, H I J, etc. Hence, WORD will be coded as VXNPQSCE.
- 28. Option (b) is correct.**  
Since all politicians are Honest and All honest person are Fair. Hence All politicians are Fair. So, it can be concluded that Some Honest persons are politicians and Some Fair persons are politicians.

**29. Option (c) is correct.**

Person sings a song

Hence, Person plays in act.

**30. Option (c) is correct.**

The best player is a twin and worst player is a male.

The best player and worst player are of same age.

**31. Option (a) is correct.**

Total students in university C (10% of total) = 855

Total students who joined Ph.D. in all universities =  $855/10 \times 100 = 8550$

Total students in E =  $8550 \times 8/100 = 684$

Percentage of African students =  $21/684 \times 100 = 3\%$

**32. Option (a) is correct.**

Total students who joined successfully completed = 5700

Students completed from university A =  $5700 \times 18/100 = 1026$

Students completed from university D =  $5700 \times 16/100 = 912$

Students joined university E = 684

Students joined university C = 855

Difference =  $1938 - 1539 = 399$

**33. Option (c) is correct.**

Total students in university C = 855

Total foreign students in university C = 171

Percentage of foreign students =  $171/855 \times 100 = 20\%$

**34. Option (a) is correct.**

Total students who joined Ph.D. in all universities = 8550

Total students who joined successfully completed = 5700

Total students joined university C = 855

Total students joined university E = 684

Total students joined university F =  $8550 \times 12/100 = 1026$

Total students joined university B =  $8550 \times 15/100 = 1283$

Students who completed from C =  $5700 \times 13/100 = 741$

Students who completed from E =  $5700 \times 9/100 = 513$

Students who completed from F =  $5700 \times 15/100 = 855$

Students who completed from B =  $5700 \times 17/100 = 969$

Percentage of C =  $741/855 \times 100 = 86.6\%$

Percentage of E =  $513/684 \times 100 = 75\%$

Percentage of F =  $855/1026 \times 100 = 83.3\%$

Percentage of B =  $969/1283 \times 100 = 75.5\%$

**35. Option (c) is correct.**

Total students who joined Ph.D. in all universities = 8550

Total students who joined successfully completed = 5700

Total students joined university G =  $8550 \times 16/100 = 1368$

Students who completed from G =  $5700 \times 12/100 = 684$

Ratio =  $684:1368 = 1:2$

**36. Option (b) is correct.**

NCTE regulates and plans the promotion of teacher education programmes across India. It ensures maintenance of rules and standards in teacher education programmes.

**37. Option (a) is correct.**

Yoga and wellness centres in educational institutes ensure the holistic development of learners along with providing value education.

**38. Option (c) is correct.**

The main source of air pollution is vehicle, industrial and thermal plants emissions.

The main source of Land pollution is excessive use of fertilizers.

The main source of Water pollution is industrial and residential discharges and wastes.

The main source of Noise pollution is noise from aircrafts, industries, vehicles and other SONAR sounds.

**39. Option (c) is correct.**

Since John is in BCC of the email, hence receivers in To and CC fields will not know about it

**40. Option (b) is correct.**

Statutory function means anything prescribed by statute (a law passed by legislative body). BOM performs statutory functions in a university.

41. **Option (a) is correct.**  
In Word documents, any image, written content, etc. can be copied from one page and pasted in any other page of the same document.
42. **Option (b) is correct.**  
The CPU is the main part which controls the functioning of all the other parts of computer.  
RAM is a temporary storage device in a computer.  
ROM is a permanent storage device in computers.  
LCD is a technology used in flat screen monitors or television sets nowadays.
43. **Option (b) is correct.**  
Digital divide is the difference or gap between people who do not have access to technology to those who have access to information and technology.
44. **Option (c) is correct.**  
The objective of the environment protection act, 1986 is to protect and improve the environment and to control pollution in the country.
45. **Option (b) is correct.**  
Hydrogen sulphide level in water represents the quality of water. Presence of High  $H_2S$  in household water can cause many diseases. Water may be dark black in colour.
46. **Option (b) is correct.**  
National institute of educational planning and administration undertake and promote research in various fields of education planning. It is a research university in Delhi established by MHRD IN 1979.
47. **Option (a) is correct.**  
Blue revolution refers to the intensive increase in the production of marine and fish products in India. It includes promotion of fisheries and the development of people associated with it.
48. **Option (c) is correct.**  
Human relations in present in any academic institutes reflects the academic ethos in such institutes.
49. **Option (d) is correct.**  
Mentorship programmes from experienced faculties of the universities will be best for promoting human values in students.
50. **Option (a) is correct.**  
Device driver is a software that controls and helps in operation of any external device attached to the computer system.

# UGC NET PAPER-1

# GENERAL APTITUDE

# Solved Paper July 2018

Time Allotted: 1 Hour

Maximum Marks: 100

### Important Instructions:

- Each question carries 2 marks.
- This paper consists of fifty (50) multiple-choice type of questions.
- Each item has four alternative responses marked (a), (b), (c) and (d). You have to darken the oval as indicated below on the correct response against each item.  
**Example:** where (c) is the correct response.
- Your responses to the items are to be indicated in the **Answer Sheet**.
- Use of any calculator or log table etc., is prohibited.**
- Negative Marking: For each incorrect answer 0.5 marks shall be deducted.**

1. Which of the following set of statements best describes the nature and objectives of teaching?

Indicate your answer by selecting from the code.

- Teaching and learning are integrally related.
- There is no difference between teaching and training.
- Concern of all teaching is to ensure some kind of transformation in students.
- All good teaching is formal in nature.
- A teacher is a senior person.
- Teaching is a social act whereas learning is a personal act.

- (a) 1, 2 and 4                      (b) 2, 3 and 5  
(c) 1, 3 and 6                      (d) 4, 5 and 6

2. Which of the following learner characteristics is highly related to effectiveness of teaching?

- (a) Prior experience of the learner  
(b) Educational status of the parents of the learner  
(c) Peer groups of the learner  
(d) Family size from which the learner comes.

3. In the two sets given below Set-I indicates methods of teaching while Set-II provides the basic requirements for success/effectiveness. Match the two sets and indicate your answer by choosing from the code:

Set-I (Method of teaching)	Set-II (Basic requirements for success/effectiveness)
(a) Lecturing	(i) Small step presentation with feedback provided

(b) Discussion in groups	(ii) Production of large number of ideas
(c) Brainstorming	(iii) Content delivery in a lucid language
(d) Programmed Instructional	(iv) Use of teaching-aids procedure
	(v) Theme based interaction among participants

### Code:

- (a)      (b)      (c)      (d)
- (i)      (ii)      (iii)      (iv)
  - (ii)      (iii)      (iv)      (v)
  - (iii)      (v)      (ii)      (i)
  - (iv)      (ii)      (i)      (iii)

4. From the list of evaluation procedures given below identify those which will be called 'formative evaluation'. Indicate your answer by choosing from the code:

- A teacher awards grades to students after having transacted the course work.
- During interaction with students in the classroom, the teacher provides corrective feedback.
- The teacher gives marks to students on a unit test.
- The teacher clarifies the doubts of students in the class itself.

5. The overall performance of a student is reported to parents at every three months interval.
6. The learner's motivation is raised by the teacher through a question-answer session.

**Code:**

- (a) 1, 2 and 3                      (b) 2, 3 and 4  
(c) 1, 3 and 5                      (d) 2, 4 and 6

5. **Assertion (A):** All teaching should aim at ensuring learning.

**Reason (R):** All learning results from teaching.

**Choose the correct answer from the following code:**

- (a) Both (A) and (R) are true, and (R) is the correct explanation of (A).
  - (b) Both (A) and (R) are true, but (R) is not the correct explanation of (A).
  - (c) (A) is true, but (R) is false.
  - (d) (A) is false, but (R) is true.
6. There are two sets given below. Set-I specifies the types of research, while Set-II indicates their characteristics. Match the two and give your answer by selecting the appropriate code.

Set-I (Research types)	Set-II (Characteristics)
(a) Fundamental research	(i) Finding out the extent of perceived impact of an intervention
(b) Applied research	(ii) Developing an effective explanation through theory building
(c) Action research	(iii) Improving an existing situation through use of interventions
(d) Evaluative research	(iv) Exploring the possibility of a theory for use in various situations
	(v) Enriching technological resources

**Code:**

- |    | (a)  | (b)   | (c)   | (d)  |
|----|------|-------|-------|------|
| 1. | (ii) | (iv)  | (iii) | (i)  |
| 2. | (v)  | (iv)  | (iii) | (ii) |
| 3. | (i)  | (ii)  | (iii) | (iv) |
| 4. | (ii) | (iii) | (iv)  | (v)  |

7. Which of the sets of activities best indicate the cyclic nature of action research strategy?
  - (a) Reflect, Observe, Plan, Act
  - (b) Observe, Act, Reflect, Plan
  - (c) Act, Plan, Observe, Reflect
  - (d) Plan, Act, Observe, Reflect
8. Which of the following sequences of research steps is nearer to scientific method?
  - (a) Suggested solution of the problem, Deducing the consequences of the solution, Perceiving the problem situation, Location of the difficulty and testing the solutions.
  - (b) Perceiving the problem situation, Locating the actual problem and its definition, Hypothesizing, Deducing the consequences of the suggested solution and Testing the hypothesis in action.
  - (c) Defining a problem, Identifying the causes of the problem, Defining a population, Drawing a sample, Collecting data and Analysing results.
  - (d) Identifying the causal factors, Defining the problem, Developing a hypothesis, Selecting a sample, Collecting data and arriving at generalizations and Conclusions.
9. The problem of 'research ethics' is concerned with which aspect of research activities?
  - (a) Following the prescribed format of a thesis
  - (b) Data analysis through qualitative or quantitative techniques
  - (c) Defining the population of research
  - (d) Evidence based research reporting
10. In which of the following activities, potential for nurturing creative and critical thinking is relatively greater?
  - (a) Preparing research summary
  - (b) Presenting a seminar paper
  - (c) Participation in research conference
  - (d) Participation in a workshop

**Direction for question 11 to 15:**

Read the following passage carefully and answer questions.

If India has to develop her internal strengths, the nation has to focus on the technological imperatives, keeping in mind three dynamic dimensions: the people, the overall economy and the strategic interests. These technological imperatives also take into account a 'fourth' dimension, time, an offshoot of modern day dynamism in business, trade, and technology that leads to continually shifting targets. We believe that technological strengths are especially crucial in dealing with this fourth dimension underlying continuous change in the aspirations of the people, the economy in the global context, and the strategic interests. The progress of technology lies at the heart of human history. Technological strengths are the key to creating more productive employment in an increasingly competitive market place and to continually upgrade human skills. Without a pervasive use of technologies, we cannot achieve overall development of our people in the years to come. The direct linkages of technology to the nation's strategic strengths are becoming more and more clear, especially since the 1990s. India's own strength in a number of core areas still puts it in a position of reasonable strength in geo-political context. Any nation aspiring to become a developed one needs to have strengths in various strategic technologies and also the ability to continually upgrade them through its own creative strengths. For people-oriented actions as well, whether for the creation of large scale productive employment or for ensuring nutritional and health security for people, or for better living conditions, technology is the only vital input. The absence of greater technological impetus could lead to lower productivity and wastage of precious natural resources. Activities with low productivity or low value addition, in the final analysis, hurt the poorest most. The technological imperatives to lift our people to a new life, and to a life they are entitled to is important. India, aspiring to become a major economic power in terms of trade and increase in GDP, cannot succeed on the strength of turnkey projects designed and built abroad or only through large-scale imports of plant machinery, equipment and know-how. Even

while being alive to the short-term realities, medium and long-term strategies to develop core technological strengths within our industry are vital for envisioning a developed India.

11. According to the above passage, which of the following are indicative of the fourth dimension?

1. Aspirations of people
2. Modern day dynamism
3. Economy in the global context
4. Strategic interests

**Code:**

- (a) 1, 2 and 3                      (b) 2, 3 and 4  
(c) 1, 3 and 4                      (d) 1, 2 and 4

12. More productive employment demands:

- (a) Pervasive use of technology
- (b) Limiting competitive market place
- (c) Geo-political considerations
- (d) Large industries

13. Absence of technology would lead to:

1. Less pollution
2. Wastage of precious natural resources
3. Low value addition
4. Hurting the poorest most

**Code:**

- (a) 1, 2 and 3                      (b) 2, 3 and 4  
(c) 1, 2 and 4                      (d) 1, 3 and 4

14. The advantage of technological inputs would result in:

- (a) Unbridled technological growth
- (b) Importing plant machinery
- (c) Sidelining environmental issues
- (d) Lifting our people to a life of dignity

15. Envisioning a developed India requires:

- (a) Aspiration to become a major economic player
- (b) Dependence upon projects designed abroad
- (c) Focus on short-term projects
- (d) Development of core technological strengths

16. Differentiation between acceptance and non-acceptance of certain stimuli in classroom communication is the basis of:

- (a) selective expectation of performance
- (b) selective affiliation to peer groups
- (c) selective attention
- (d) selective morality



**17. Assertion (A):** The initial messages to students in the classroom by a teacher need not be critical to establish interactions later.

**Reason (R):** More control over the communication process means more control over what the students are learning.

**Code:**

- (a) Both (A) and (R) are true, and (R) is the correct explanation of (A).
- (b) Both (A) and (R) are true, but (R) is not the correct explanation of (A).
- (c) (A) is true, but (R) is false.
- (d) (A) is false, but (R) is true.

**18. Assertion (A):** To communicate well in the classroom is a natural ability.

**Reason (R):** Effective teaching in the classroom demands knowledge of the communication process.

**Code:**

- (a) Both (A) and (R) are true, and (R) is the correct explanation of (A).
- (b) Both (A) and (R) are true, but (R) is not the correct explanation of (A).
- (c) (A) is true, but (R) is false.
- (d) (A) is false, but (R) is true.

**19. Assertion (A):** Classroom communication is a transactional process.

**Reason (R):** A teacher does not operate under the assumption that students' responses are purposive.

Select the correct code for your answer:

- (a) Both (A) and (R) are true, and (R) is the correct explanation of (A).
- (b) Both (A) and (R) are true, but (R) is not the correct explanation of (A).
- (c) (A) is true, but (R) is false.
- (d) (A) is false, but (R) is true.

**20.** Which of the following set of statements is correct for describing the human communication process?

1. Non-verbal communication can stimulate ideas.
2. Communication is a learned ability.
3. Communication is not a universal panacea.
4. Communication cannot break-down.
5. More communication means more effective learning by students.

6. Value of what is learnt through classroom communication is not an issue for students.

**Code:**

- (a) 1, 3, 5 and 6
- (b) 2, 4, 5 and 6
- (c) 1, 2, 3 and 4
- (d) 1, 4, 5 and 6

**21.** The next term in the series

–1, 5, 15, 29, ?, ...

is:

- (a) 36
- (b) 47
- (c) 59
- (d) 63

**22.** The next term in the series

ABD, DGK, HMS, MTB, SBL, ?, ...

is:

- (a) ZKU
- (b) ZCA
- (c) ZKW
- (d) KZU

**23.** If VARANASI is coded as WCUESGZQ, then the code of KOLKATA will be:

- (a) LOQOZEH
- (b) HLZEOOQ
- (c) ZELHOQO
- (d) LQOOFZH

**24.** Introducing Rakesh to her husband, a women said, "His brother's father is the only son of my grandfather". The woman is related to Rakesh as:

- (a) Aunt
- (b) Mother
- (c) Sister
- (d) Daughter

**25.** Two numbers are in the ratio 2:5. If 16 is added to both the numbers, their ratio becomes 1:2. The numbers are:

- (a) 16, 40
- (b) 20, 50
- (c) 28, 70
- (d) 32, 80

**26.** Superiority of intellect depends upon its power of concentration on one theme in the same way as a concave mirror collects all the rays that strike upon it into one point.

What type of reasoning is entailed in the above statement?

- (a) Mathematical
- (b) Psychological
- (c) Analogical
- (d) Deductive

**27.** Given below are two premises (A and B). Four conclusions are drawn from them. Select the code that states validly drawn conclusion(s) (taking the premises individually or jointly).

**Premises:**

- (A) Most of the dancers are physically fit.
- (B) Most of the singers are dancers.

**Conclusions:**

1. Most of the singers are physically fit.
2. Most of the dancers are singers.
3. Most of the physically fit persons are dancers.
4. Most of the physically fit persons are singers.

**Code:**

- (a) 1 and 2                      (b) 2 and 3  
(c) 3 and 4                      (d) 1 and 4

28. Which one among the following is a presupposition in inductive reasoning?

- (a) Law of identity  
(b) Unchangeability in nature  
(c) Harmony in nature  
(d) Uniformity of nature

29. If the proposition 'domestic animals are hardly ferocious' is taken to be false, which of the following proposition/propositions can be claimed to be certainly true? Select the correct Code:

**Propositions:**

1. All domestic animals are ferocious.
2. Most of the domestic animals are ferocious.
3. No domestic animal is ferocious.
4. Some domestic animals are non-ferocious.

**Code:**

- (a) 1 and 2                      (b) 1 only  
(c) 3 and 4                      (d) 2 only

30. Which one of the following statements is not correct in the context of the Venn diagram method?

- (a) It is a method of testing the validity of arguments.  
(b) It represents both the premises of a syllogism in one diagram.  
(c) It requires two overlapping circles for the two premises of a standard-form categorical syllogism.  
(d) It can be used to represent classes as well as propositions.

**Direction for questions 31 to 35:**

The table below embodies data on the production, exports and per capita consumption of rice in country P for the five years from 2012 to 2016. Answer questions based on the data contained in the table.

Year-wise Production, Exports and Per Capita Consumption of Rice			
Year	Production (in million kg)	Exports (in million kg)	Per Capita Consumption (in kg)
2012	186.5	114	36.25
2013	202	114	35.2
2014	238	130	38.7
2015	221	116	40.5
2016	215	88	42

Where, Per Capita Consumption =  $(\text{Consumption in million kg}) \div (\text{Population in million})$  and consumption (in million kg) =  $\text{Production} - \text{Exports}$ .

31. The percentage increase in the consumption of rice over the previous year was the highest in which year?

- (a) 2013                      (b) 2014  
(c) 2015                      (d) 2016

32. What is the population of the country in the year 2014 (in million)?

- (a) 2.64                      (b) 2.72  
(c) 2.79                      (d) 2.85

33. The ratio of exports to consumption in the given period was the highest in the year:

- (a) 2012                      (b) 2013  
(c) 2014                      (d) 2015

34. In which year, the population of the country was the highest?

- (a) 2013                      (b) 2014  
(c) 2015                      (d) 2016

35. What is the average consumption of rice (in million kg) over the years 2012-2016?

- (a) 104                      (b) 102.1  
(c) 108                      (d) 100.1

36. Which of the following statements, regarding the term ICT is/are TRUE?

**P:** ICT is an acronym that stands for Indian Classical Technology.

**Q:** Converging technologies that exemplify ICT include the merging of audio-visual, telephone and computer networks through a common cabling system.

- (a) P only                      (b) Q only  
(c) P and Q                      (d) Neither P nor Q

37. A new Laptop has been produced that weighs less, is smaller and uses less power than previous Laptop models.

Which of the following technologies has been used to accomplish this?

- (a) Universal Serial Bus Mouse  
(b) Faster Random Access Memory  
(c) Blu Ray Drive  
(d) Solid State Hard Drive

38. Given the following email fields, which of the email addresses will 'swami' be able to see when he receives the message?

To...	ram@test.com
Cc...	raj@test.com; ravi@test.com
Bcc...	swami@test.com; rama@test.com

- (a) ram@test.com  
(b) ram@test.com; raj@test.com; ravi@test.com  
(c) ram@test.com; rama@test.com  
(d) ram@test.com; rama@test.com; raj@test.com; ravi@test.com

39. Put the following units of storage into the correct order, starting with the smallest unit first and going down to the largest unit:

1. Kilobyte
2. Byte
3. Megabyte
4. Terabyte
5. Gigabyte
6. Bit

Give your answer from the following code:

- (a) 6, 2, 1, 3, 4, 5      (b) 6, 2, 1, 4, 5, 3  
(c) 6, 2, 1, 3, 5, 4      (d) 6, 2, 1, 4, 3, 5

40. With regard to computer memory, which of the following statement(s) is/are TRUE?

**P:** Read Only Memory (ROM) is 'volatile' memory.

**Q:** Random Access Memory (RAM) is 'volatile' memory.

**R:** Secondary Memory is 'volatile' memory.

- (a) P only      (b) Q only  
(c) P and Q only      (d) P and R only

41. 'Fly ash' produced in thermal power plants is an ecofriendly resource for use in:

1. agriculture as micro-nutrient
2. wasteland development

3. dam and water holding structures
4. brick industry

Choose the correct answer from the code given below:

- (a) 1, 2 and 4      (b) 2, 3 and 4  
(c) 1, 3 and 4      (d) 1, 2, 3 and 4

42. Which of the following types of natural disasters has no definite beginning and end?

- (a) Earthquakes      (b) Landslides  
(c) Hurricanes      (d) Droughts

43. **Assertion (A):** Indoor air pollution is a serious health hazard.

**Reason (R):** The dispersal of air pollutants is rather limited in indoor environment.

Choose the correct answer from the code given below:

- (a) Both (A) and (R) are true and (R) is the correct explanation of (A).  
(b) Both (A) and (R) are true but (R) is not the correct explanation of (A).  
(c) (A) is true and (R) is false.  
(d) Both (A) and (R) are false.

44. In terms of their contribution to the total power generation in India, identify the correct sequence of energy sources - Thermal Power Plants (TPP), Large Hydropower Projects (LHP), Nuclear Energy (NE) and Renewable Energy (RE) which includes solar energy, wind energy, biomass and small hydropower projects.

- (a) TPP > RE > LHP > NE  
(b) TPP > LHP > RE > NE  
(c) LHP > TPP > RE > NE  
(d) LHP > TPP > NE > RE

45. Which of the following is considered as a major source of pollution in rivers of India?

- (a) Unregulated small scale industry  
(b) Untreated sewage  
(c) Agricultural run-off  
(d) Thermal power plants

46. India has the largest Higher Education System in the World after:

1. The United States of America
2. Australia
3. China
4. United Kingdom (U.K.)

Select the correct answer from the code given below:

- (a) 1, 2, 3 and 4      (b) 1, 2 and 3  
(c) 1, 3 and 4      (d) 1 and 3 only

47. Prime Minister Research Fellowship is for students pursuing Ph.D. programme in:
- (a) State and Central Universities
  - (b) Central Universities, IISc, IITs, NITs, IISERs and IIITs
  - (c) IISc, IITs, NITs, IISERs, IIITs, State and Central Universities
  - (d) IITs and IISc

48. Leader of the Opposition is a member of committees which select:
- 1. the Central Information Commissioner
  - 2. the Central Vigilance Commissioner
  - 3. the Chairperson of National Human Rights Commission
  - 4. the Chairperson of National Commission for Women

Select the correct answer from the code given below:

- (a) 1, 2, 3 and 4
- (b) 1, 2 and 3
- (c) 1, 3 and 4
- (d) 1, 2 and 4

49. Which of the following statements are correct about gender budgeting?
- 1. It is a separate budget addressing the specific needs of women.

- 2. It assesses the impact of the government budget on women.
- 3. It is an accounting exercise.
- 4. It is another budgeting innovation.

Select the correct answer from the code given below:

- (a) 2 and 4 only
- (b) 1 and 4 only
- (c) 1, 3 and 4
- (d) 2, 3 and 4

50. Which of the following are the barriers to citizen-centric administration in India?

- 1. Wooden and inflexible attitude of the civil servants
- 2. Ineffective implementation of laws and rules
- 3. Awareness of rights and duties of citizens
- 4. Lack of job opportunities for the youth

Select the correct answer from the code given below:

- (a) 1, 2, 3 and 4
- (b) 1, 2 and 3
- (c) 1, 2 and 4
- (d) 1 and 2 only

□□□

## Answer Key

Q.No.	Answer	Topic's Name	Chapter's Name
1	c	Objectives of teaching	Teaching aptitude
2	a	Learner characteristics	Teaching aptitude
3	c	Teaching methods	Teaching aptitude
4	d	Formative evaluation	Teaching aptitude
5	c	Factors affecting teaching	Teaching aptitude
6	a	Types of research	Research aptitude
7	d	Action research	Research aptitude
8	c	Steps of research	Research aptitude
9	d	Research ethics	Research aptitude
10	d	Article writing	Research aptitude
11	c	Fact based	Comprehension
12	a	Fact based	Comprehension
13	b	Fact based	Comprehension
14	d	Fact based	Comprehension
15	d	Inference based	Comprehension
16	c	Classroom communication	Communication
17	d	Classroom communication	Communication
18	d	Classroom communication	Communication
19	c	Classroom communication	Communication
20	a	Effective communication	Communication
21	b	Number series	Mathematical aptitude
22	c	Letter series	Mathematical aptitude
23	d	Codes	Mathematical aptitude
24	c	Relationships	Logical reasoning
25	d	Ratios	Mathematical aptitude
26	c	Analogies	Logical reasoning
27	a	Syllogism	Logical reasoning
28	d	Inductive reasoning	Logical reasoning
29	a	Proposition	Logical reasoning
30	c	Venn diagram method	Logical reasoning
31	b	Data interpretation	Data interpretation
32	c	Data interpretation	Data interpretation
33	a	Data interpretation	Data interpretation
34	d	Data interpretation	Data interpretation
35	d	Data interpretation	Data interpretation
36	b	Terminology	Information and communication technology
37	d	Terminology	Information and communication technology
38	b	Email	Information and communication technology
39	c	Terminology	Information and communication technology
40	b	Terminology	Information and communication technology

41	d	Anthropogenic activities	People, development and environment
42	d	Natural hazards	People, development and environment
43	b	Air pollution	People, development and environment
44	a	Energy resources	People, development and environment
45	b	Water pollution	People, development and environment
46	d	Evolution of higher education in post-independence India	Higher education system
47	d	Learning programmes in India	Higher education system
48	b	Governance and education	Higher education system
49	a	Governance and education	Higher education system
50	d	Governance and education	Higher education system

**ANSWERS WITH EXPLANATIONS**

1. **Option (c) is correct.**  
Teaching is a social process which is directly related to learning. The aim of teaching is always to bring some change in the behaviour of students.
2. **Option (a) is correct.**  
Previous experience of the learner determines the level of understanding in the learner. It also becomes the basis for further learning.
3. **Option (c) is correct.**  
Lecturing will involve delivering the content in the language which is easy to understand.  
Discussion in groups on any topic is usually an interaction among participants on a given topic to create an insight.  
Brainstorming helps in identifying the various alternative ideas which can be considered.  
Programmed instructional procedure is a type of predetermined sequence of learning material which learners can access as per their own speed of understanding.
4. **Option (d) is correct.**  
Formative assessment is the bunch of evaluation tools used by the teacher/teachers during the learning process, to assess the understanding level of students and to modify the techniques as per the requirements of learners. The constructive feedback can also be provided to learners based on the assessment. This type of evaluation helps in motivating learners for further learning process and clarifying their doubts during the lectures itself.
5. **Option (c) is correct.**  
The basic aim of teaching is to ensure effective learning but learning can occur from various other sources apart from teaching like personal experience, observation, modelling, etc.
6. **Option (a) is correct.**  
Fundamental research is the research conducted for developing a theory and explanation for the same.  
Applied research is conducted for understanding the practical implications of any theory or concept by applying it in various situations.  
Action research is research conducted to find solutions to an existing problem or to conduct an experiment/survey to learn from practical implications.  
Evaluation research is a study conducted to understand the impact or result of any tool implemented.
7. **Option (d) is correct.**  
The steps of action research are plan, act, observe and reflect.
8. **Option (c) is correct.**  
The steps of scientific research involve:
  1. Defining problem
  2. Hypothesis formulation
  3. Collecting data
  4. Analysing data
  5. Hypothesis testing
  6. Generalization of conclusion
9. **Option (d) is correct.**  
Research ethics is significant while reporting the results as any interpretation without proper evidence can be misleading.
10. **Option (d) is correct.**  
Participation in a workshop promotes creative and innovative thinking in learners more in comparison to other given options. Learners are encouraged to identify the various aspects of any field of study.
11. **Option (c) is correct.**  
The fourth dimension which is time is behind the changes in the aspirations of people,

strategic interest and economy in global context.

**12. Option (a) is correct.**

A widespread use of technology is the key for productive employment and upgrading human skills. Technological advancement is the only way to ensure overall development of people.

**13. Option (b) is correct.**

The absence of technology will lead to lower production, less value addition, wastage of valuable resources. This will be harmful for the most poorest of the country.

**14. Option (d) is correct.**

Technological inputs will result in the improvement in the quality of life of our people. They will get a life of dignity.

**15. Option (d) is correct.**

Development of our technological strengths in our industries is a necessity for envisioning a developed India.

**16. Option (c) is correct.**

Selective attention is focusing on one message while ignoring others. It may be listening attentively to what the teacher is saying while avoiding the talkative friend.

**17. Option (d) is correct.**

Effectively controlling what is being communicated in the classroom will give teachers an opportunity to ensure students are learning the necessary contents. The initial part of any message will help in establishing the basis of further communication.

**18. Option (d) is correct.**

A teacher should have a good understanding of the communication process to ensure students are able to learn effectively. Communication skills can be learned through practice. It is not a natural skill.

**19. Option (c) is correct.**

Classroom communication is a sequence of activities that is performed in a way to ensure learning in students. Teachers will always assume that students have a purpose to communicate in a classroom.

**20. Option (a) is correct.**

Communication can breakdown if not received effectively.

**21. Option (b) is correct.**

The difference between the terms of the series  $-1, 5, 15, 29$  is:

$$\begin{array}{ccccccccc} (-)1 & & 5 & & 15 & & 29 & & 47 \\ & \underbrace{\hspace{1.5cm}} & & \underbrace{\hspace{1.5cm}} & & \underbrace{\hspace{1.5cm}} & & \underbrace{\hspace{1.5cm}} & \\ & 6 & & 10 & & 14 & & 18 & \\ & & \underbrace{\hspace{1cm}} & & \underbrace{\hspace{1cm}} & & \underbrace{\hspace{1cm}} & & \\ & & 4 & & 4 & & 4 & & \end{array}$$

The difference between terms of series  $6, 10, 14$  is 4.

Hence, adding 4 to 14, it will be 18.

Adding 18 to 29, it will be 47.

**22. Option (c) is correct.**

The difference between letters is increasing with each word. Considering alphabets are written in a series:

A 0 B 1 D

D 2 G 3 K

H 4 M 5 S

M 6 T 7 B

S 8 B 9 L

Z 10 K 11 W

**23. Option (d) is correct.**

The alphabets are coded with the gaps of sequence of number series.

V 0 W

A 1 C

R 2 U

A 3 E Sequence as increase.

Hence, KOLKATA will be LQOOFZH.

**24. Option (c) is correct.**

Brother of Rakesh will be the brother of the Women too. As their father is the only son of her grandfather.

**25. Option (d) is correct.**

Number 1 =  $2A$

Number 2 =  $5A$

$$\frac{2A + 16}{5A + 16} = \frac{1}{2}$$

$$4A + 32 = 5A + 16$$

$$A = 16$$

$$\therefore \text{1st Number} = 32$$

$$\text{2nd Number} = 80$$

**26. Option (c) is correct.**

Analogical reasoning tries to identify the common pattern between two situations for better understanding.



**27. Option (a) is correct.**

Most of the singers are dancers and most of the dancers are physically fit.

Hence, most of the singers are physically fit and most of the dancers are singers.

**28. Option (d) is correct.**

Inductive reasoning is based on the presupposition that anything that occurs in the future is based on the past events. Hence, the law of uniformity of nature applies here.

**29. Option (a) is correct.**

If "Domestic animals are hardly ferocious" is false, then we can assume that all domestic animals are ferocious or most of the domestic animals are ferocious.

**30. Option (c) is correct.**

Venn diagram is used to test validity of statements. It represents both the premises in one diagram and it can represent classes as well as prepositions.

**31. Option (b) is correct.**

Percentage increase in consumption in

$$2013 = \frac{1.05}{36.25} \times 100 = 2.8\%$$

Percentage increase in consumption in

$$2014 = \frac{3.5}{35.2} \times 100 = 9.9\%$$

Percentage increase in consumption in

$$2015 = \frac{1.8}{38.7} \times 100 = 4.6\%$$

Percentage increase in consumption in

$$2016 = \frac{1.5}{40.5} \times 100 = 3.7\%$$

**32. Option (c) is correct.**

Consumption (million kg) in 2014 = 238 – 130 = 108

Applying the given formulae,

$$38.7 \text{ kg} = 108/A$$

$$A = 108/38.7 = 2.79 \text{ million}$$

**33. Option (a) is correct.**

Consumption in 2012 = 72.5 million kg

Export:Import = 114:72.5

Consumption in 2013 = 88 million kg

Export:Import = 114:88

Consumption in 2014 = 108 million kg

Export:Import = 130:108

Consumption in 2015 = 105 million kg

Export:Import = 116:105

**34. Option (d) is correct.**

Consumption in 2013 = 88 million kg

Population in 2013 = Consumption in million/  
per capita consumption

$$= 88/35.2 = 2.5 \text{ million}$$

Consumption in 2014 = 108 million kg

Population in 2014 = 108/38.7 = 2.79 million

Consumption in 2015 = 105 million kg

Population in 2015 = 105/40.5 = 2.59 million

Consumption in 2016 = 127 million kg

Population in 2016 = 127/42 = 3.02 million

**35. Option (d) is correct.**

Total consumption of rice from 2012 to 2016 (in million) = 500.5 million

$$\text{Average consumption} = 500.5/5 = 100.1$$

**36. Option (b) is correct.**

ICT stands for information and communication technology.

**37. Option (d) is correct.**

Solid state hard drives are faster than mechanical hard disks. It helps in speeding up the Pcs.

**38. Option (b) is correct.**

Since Swami is in the BCC area of an email, he will be able to see the TO and CC email address both. TO and CC address are always seen by everyone.

**39. Option (c) is correct.**

The order will be Bit, Byte, Kilobyte, Megabyte, Gigabyte, Terabyte.

**40. Option (b) is correct.**

In a computer system, RAM is a volatile memory. Data is stored in RAM on a temporary basis.

**41. Option (d) is correct.**

Fly ash is used in agriculture to neutralize soil, development of wasteland, in brick industries, and in dam structures.

**42. Option (d) is correct.**

Drought and Famine have no definite beginning or end. It can prolong for a very long time.

**43. Option (b) is correct.**

Both the statements are true but they are not related. The reasons for indoor air pollutants are carpets, furniture, etc.

**44. Option (a) is correct.**

Energy generation in India is from various sources like:

The thermal plant is 65% of total production.

From renewable sources is 17.1% of total production.

Large hydro plants account for 12% of total production.

From nuclear sources is 3.2% of total production.

**45. Option (b) is correct.**

Untreated sewage is the largest source of pollution in rivers of India.

**46. Option (d) is correct.**

India has the third largest higher education system in the world after the US and China.

**47. Option (d) is correct.**

There are total 38 institutions of which students are eligible for this fellowship. Amount for the

fellowship is ₹ 70,000 per month for first two years and ₹ 75,000 per month for third and ₹ 80,000 per month for 4th and 5th year.

**48. Option (b) is correct.**

Leaders of the opposition party are part of a commission which selects the central information officer, central vigilance commissioner, and chairperson of NHRC.

**49. Option (a) is correct.**

Gender budgeting means preparing a budget from a point of view of gender. In India gender budgeting consists two parts: schemes for spending 100% for women and schemes to spend atleast 30% for women.

**50. Option (d) is correct.**

The barriers of citizen centric administration is the rigid attitude of civil servants in India and improper implementation of laws and rules in the country.



# UGC NET PAPER-1

## GENERAL APTITUDE

# Solved Paper November 2017

Time Allotted: 1 Hour

Maximum Marks: 100

### Important Instructions:

1. Each question carries 2 marks.
2. This paper consists of fifty (50) multiple-choice type of questions.
3. Each item has four alternative responses marked (a), (b), (c) and (d). You have to darken the oval as indicated below on the correct response against each item.  
**Example:** where (c) is the correct response.
4. Your responses to the items are to be indicated in the **Answer Sheet**.
5. **Use of any calculator or log table etc., is prohibited.**
6. **Negative Marking: For each incorrect answer 0.5 marks shall be deducted.**

1. Which of the following set of statements best represents the nature and objective of teaching and learning?
  1. Teaching is like selling and learning is like buying.
  2. Teaching is a social act while learning is a personal act.
  3. Teaching implies learning whereas learning does not imply teaching.
  4. Teaching is a kind of delivery of knowledge while learning is like receiving it.
  5. Teaching is an interaction and is triadic in nature whereas learning is an active engagement in a subject domain.

(a) 1, 4 and 5                      (b) 2, 3 and 5  
(c) 1, 2 and 3                      (d) 1, 2 and 4
2. From the list given below identify the learner characteristics which would facilitate teaching learning system to become effective. Choose the correct code to indicate your answer.
  1. Prior experience of learner
  2. Learner's family lineage
  3. Aptitude of the learner
  4. Learner's stage of development
  5. Learner's food habits and hobbies
  6. Learner's religious affiliation

(a) 1, 3 and 4                      (b) 4, 5 and 6  
(c) 1, 4 and 5                      (d) 2, 3 and 6
3. **Assertion (A):** All teaching implies learning.  
**Reason (R):** Learning to be useful must be derived from teaching.  
Choose the correct answer from the following:

(a) Both (A) and (R) are true and (R) is the correct explanation of (A).  
(b) Both (A) and (R) are true but (R) is not the correct explanation of (A).  
(c) (A) is true, but (R) is false.  
(d) (A) is false, but (R) is true.
4. On the basis of summative tests, a teacher is interpreting his/her students' performance in terms of their wellness lifestyle evident in behaviour. This will be called:
  - (a) Formative testing
  - (b) Continuous and comprehensive evaluation
  - (c) Norm-referenced testing
  - (d) Criterion-referenced testing
5. Which one of the following is a key behaviour in effective teaching?
  - (a) Using student ideas and contribution
  - (b) Structuring
  - (c) Instructional variety
  - (d) Questioning
6. Which of the following research types focuses on ameliorating the prevailing situations?
  - (a) Fundamental Research
  - (b) Applied Research
  - (c) Action Research
  - (d) Experimental Research
7. A researcher attempts to evaluate the effect of method of feeding on anxiety - proneness of children. Which method of research would be appropriate for this?
  - (a) Case study method
  - (b) Experimental method
  - (c) Ex-post-facto method
  - (d) Survey method

8. In which of the following arrangements a wider spectrum of ideas and issues may be made possible?
- (a) Research Article      (b) Workshop mode  
(c) Conference            (d) Symposium
9. In finalizing a thesis writing format, which of the following would form part of supplementary pages?
- (a) List of tables and figures  
(b) Table of contents  
(c) Conclusions of the study  
(d) Bibliography and Appendices
10. Which of the following is susceptible to the issue of research ethics?
- (a) Inaccurate application of statistical techniques  
(b) Faulty research design  
(c) Choice of sampling techniques  
(d) Reporting of research findings

**Direction for questions 11 to 15:**

Read the passage carefully and answer the questions.

Climate change is considered to be one of the most serious threats to sustainable development, with adverse impacts on the environment, human health, food security, economic activity, natural resources and physical infrastructure. Global climate varies naturally. According to the Intergovernmental Panel on Climate Change (IPCC), the effects of climate change have already been observed, and scientific findings indicate that precautionary and prompt action is necessary. Vulnerability to climate change is not just a function of geography or dependence on natural resources; it also has social, economic and political dimensions which influence how climate change affects different groups. Poor people rarely have insurance to cover loss of property due to natural calamities i.e. drought, floods, super cyclones etc. The poor communities are already struggling to cope with the existing challenges of poverty and climate variability and climate change could push many beyond their ability to cope or even survive. It is vital that these communities are helped to adapt to the changing dynamics of nature. Adaptation is a process through which societies make themselves better able to cope with an uncertain future. Adapting to climate change entails taking the right measures to reduce the negative effects of climate change (or exploit the positive ones) by making the appropriate

adjustments and changes. These range from technological options such as increased sea defences or flood - proof houses on stilts to behavioural change at the individual level, such as reducing water use in times of drought. Other strategies include early warning systems for extreme events, better water management, improved risk management, various insurance options and biodiversity conservation. Because of the speed at which climate change is happening due to global temperature rise, it is urgent that the vulnerability of developing countries to climate change is reduced and their capacity to adapt is increased and national adaptation plans are implemented. Adapting to climate change will entail adjustments and changes at every level from community to national and international. Communities must build their resilience, including adopting appropriate technologies while making the most of traditional knowledge, and diversifying their livelihoods to cope with current and future climate stress. Local coping strategies and knowledge need to be used in synergy with government and local interventions. The need for adaptation interventions depends on national circumstances. There is a large body of knowledge and experience within local communities on coping with climatic variability and extreme weather events. Local communities have always aimed to adapt to variations in their climate. To do so, they have made preparations based on their resources and their knowledge accumulated through experience of past weather patterns. This includes times when they have also been forced to react to and recover from extreme events, such as floods, drought and hurricanes. Local coping strategies are an important element of planning for adaptation. Climate change is leading communities to experience climatic extremes more frequently, as well as new climate conditions and extremes. Traditional knowledge can help to provide efficient, appropriate and time-tested ways of advising and enabling adaptation to climate change in communities who are feeling the effects of climate changes due to global warming.

11. Given below are the factors of vulnerability of poor people to climate change. Select the code that contains the correct answer.
1. Their dependence on natural resources
  2. Geographical attributes
  3. Lack of financial resources
  4. Lack of traditional knowledge

- Code:**  
 (a) 1, 2 and 3                      (b) 2, 3 and 4  
 (c) 1, 2, 3 and 4                (d) 3 only
12. Adaptation as a process enables societies to cope with:  
 1. An uncertain future  
 2. Adjustments and changes  
 3. Negative impact of climate change  
 4. Positive impact of climate change  
 Select the most appropriate answer from the following code:  
 (a) 1, 2, 3 and 4                (b) 1 and 3  
 (c) 2, 3 and 4                    (d) 3 only
13. To address the challenge of climate change, developing countries urgently require:  
 (a) Imposition of climate change tax  
 (b) Implementation of national adaptation policy at their level  
 (c) Adoption of short-term plans  
 (d) Adoption of technological solutions
14. The traditional knowledge should be used through:  
 (a) Its dissemination  
 (b) Improvement in national circumstances  
 (c) Synergy between government and local interventions  
 (d) Modern technology
15. The main focus of the passage is on:  
 (a) Combining traditional knowledge with appropriate technology  
 (b) Coordination between regional and national efforts  
 (c) Adaptation to climate change  
 (d) Social dimensions of climate change
16. The interaction between a teacher and students creates a zone of proximal:  
 (a) Difference                      (b) Confusion  
 (c) Development                (d) Distortion
17. The spatial audio reproduction in a classroom can reduce the students':  
 (a) Cognitive load in understanding  
 (b) Respect for the teacher  
 (c) Motivation for excellence  
 (d) Interest in technology - orientation
18. The classroom communication should essentially be:  
 (a) Contrived                      (b) Empathetic  
 (c) Abstract                        (d) Non-descriptive
19. A good communicator begins his/her presentation with a:  
 (a) Complex question    (b) Non-sequitur  
 (c) Repetitive phrase    (d) Ice-breaker
20. In a classroom, the probability of message reception can be enhanced by:  
 (a) Establishing a viewpoint  
 (b) Exposing the ignorance of students  
 (c) Increasing the information load  
 (d) Using high decibel audio tools
21. In the series 1, 6, 15, 28, 45, ..... the next term will be:  
 (a) 66                                (b) 76  
 (c) 56                                (d) 84
22. The next term in the series ABD, DGK, HMS, MTB, ..... is:  
 (a) NSA                              (b) SBL  
 (c) PSK                              (d) RUH
23. In certain code, "COVALENT" is coded as BWPDUOFM. The code of "ELEPHANT" will be:  
 (a) MFUIQRTW                (b) QMUBIADH  
 (c) QFMFUOBI                (d) EPHNTEAS
24. Ajay is a friend of Rakesh. Pointing to an old man Ajay asked Rakesh who he is? Rakesh said "His son is my son's uncle". The old man is related to Rakesh as:  
 (a) Grandfather                (b) Father-in-law  
 (c) Father                            (d) Uncle
25. A postman walked 20 m straight from his office, turned right and walked 10 m. After turning left he walked 10 m and after turning right walked 20 m. He again turned right and walked 70 m. How far is he from his office?  
 (a) 50 m                              (b) 40 m  
 (c) 60 m                              (d) 20 m
26. It is Truism to say that no one was there when life first appeared on earth. Any assertion about life's origin, thus, should be treated as a theory. The above two statements constitute:  
 (a) A historical explanation  
 (b) A narrative  
 (c) An argument  
 (d) A conjecture
27. Given below are four statements. Among them two are related in such a way that they can both be true but they cannot both be false. Select the code that indicates those two statements:

**Statements:**

1. Honest people never suffer.
2. Almost all honest people do suffer.
3. Honest people hardly suffer.
4. Each and every honest person suffers.

**Code:**

- (a) 1 and 2                      (b) 1 and 3  
(c) 1 and 4                      (d) 2 and 3

28. A deductive argument is invalid if:
- (a) Its premises and conclusion are all true.
  - (b) Its premises and conclusion are all false.
  - (c) Its premises are all false but its conclusion is true.
  - (d) Its premises are all true but its conclusion is false.
29. Given below are two premises ((a) and (b)). From those two premises four conclusions (i), (ii), (iii) and (iv) are drawn. Select the code that

states the conclusion/conclusions drawn validly (taking the premises singularly or jointly).

- Premises:** (a) All bats are mammals.  
(b) No birds are bats.

- Conclusions:** (i) No birds are mammals.  
(ii) Some birds are not mammals.  
(iii) No bats are birds.  
(iv) All mammals are bats.

**Code:**

- (a) (i) only                      (b) (i) and (ii) only  
(c) (iii) only                      (d) (iii) and (iv) only

30. Just as melting ice - cubes do not cause a glass of water to overflow, melting sea - ice does not increase oceanic volume.

What type of argument is it?

- (a) Analogical                      (b) Hypothetical  
(c) Psychological                      (d) Statistical

**Direction for questions 31 to 35:**

Answer the questions based on the data given in the table below.

**Table: Number of registered vehicles in India and India's population**

Year	Total vehicles (Lakhs)	Two wheelers (Lakhs)	Cars, Jeeps, Taxis (Lakhs)	Buses (Lakhs)	Goods vehicles (Lakhs)	Others (Lakhs)	Population (India) (Millions)
1961	6.65	0.88	3.1	0.57	1.68	0.42	439.23
1971	18.65	5.76	6.82	0.94	3.43	1.70	548.15
1981	53.91	26.18	11.60	1.62	5.54	8.97	683.32
1991	213.74	142.00	29.54	3.31	13.56	25.33	846.42
2001	549.91	385.56	70.58	6.34	29.48	57.95	1028.73
2011	1417.58	1018.65	191.23	16.04	70.64	121.02	1210.19

31. The maximum decadal growth in population of India is registered in the period:
- (a) 1961-1971                      (b) 1991-2001  
(c) 2001-2011                      (d) 1981-1991
32. In which year the decadal growth (%) in number of cars surpassed that of the two wheelers?
- (a) 1991                      (b) 2001  
(c) 1981                      (d) 2011
33. What was the average decadal growth in the number of cars during 1961-2011?
- (a) ~131%                      (b) ~68%  
(c) ~217%                      (d) ~157%
34. In the year 2001, out of total number of vehicles, the number of passenger vehicles (4 wheelers) accounted for:
- (a) ~14%                      (b) ~24%  
(c) ~31%                      (d) ~43%
35. What was the per capita ownership of two wheelers in India in the year 2011?
- (a) ~0.084%                      (b) ~0.0084%  
(c) ~0.84%                      (d) ~0.068%
36. What is the name for a webpage address?
- (a) Domain                      (b) Directory  
(c) Protocol                      (d) URL
37. The data storage hierarchy consists of:
- (a) Bytes, bits, fields, records, files and databases  
(b) Bits, bytes, fields, records, files and databases  
(c) Bits, bytes, records, fields, files and databases  
(d) Bits, bytes, fields, files, records and databases

38. Which of the following domains is used for - profit businesses?  
 (a) .org (b) .net  
 (c) .edu (d) .com
39. What is the full form of USB as used in computer related activities?  
 (a) Ultra Security Block  
 (b) Universal Security Block  
 (c) Universal Serial Bus  
 (d) United Serial Bus
40. Which of the following represents a billion characters?  
 (a) Terabytes (b) Megabytes  
 (c) Kilobytes (d) Gigabytes
41. Which of the following pollutants is the major cause of respiratory diseases?  
 (a) Suspended fine particles  
 (b) Nitrogen oxides  
 (c) Carbon monoxide  
 (d) Volatile organic compounds
42. **Assertion (A):** In urban areas, smog episodes occur frequently in winters.  
**Reason (R):** In winters, a lot of biomass is burnt by people for heating purposes or to keep themselves warm.
- Choose the correct answer from the code given below:  
 (a) Both (A) and (R) are true and (R) is the correct explanation of (A)  
 (b) Both (A) and (R) are true but (R) is not the correct explanation of (A)  
 (c) (A) is true and (R) is false  
 (d) Both (A) and (R) are false
43. Occurrence of natural hazards is affected by:  
 1. Land use changes  
 2. Drainage and construction  
 3. Ozone depletion  
 4. Climate change
- Choose the correct answer from the code given below:  
 (a) 1, 3 and 4 (b) 1, 2 and 3  
 (c) 1, 2 and 4 (d) 2, 3 and 4
44. Which of the following pollutant gases is not produced both naturally and as a result of industrial activity?  
 (a) Chlorofluorocarbons  
 (b) Nitrous oxide  
 (c) Methane  
 (d) Carbon dioxide
45. Among the following fuels of energy, which is the most environmentally friendly?  
 (a) Ethanol (b) Biogas  
 (c) CNG (d) Hydrogen
46. Which of the following are the goals of higher education in India?  
 1. Access  
 2. Equity  
 3. Quality and Excellence  
 4. Relevance  
 5. Value based education  
 6. Compulsory and free education
- Select the correct answer from the code given below:  
 (a) 1, 2 and 5 only (b) 1, 2, 5 and 6  
 (c) 1, 2, 3, 4 and 5 (d) 1, 2, 3, 4, 5 and 6
47. Which of the following has been ranked the best college in the country (2017) as per the National Institutional Ranking Framework (NIRF)?  
 (a) Miranda House, Delhi  
 (b) St. Stephen's College, Delhi  
 (c) Fergusson College, Pune  
 (d) Maharaja's College, Mysore
48. Which of the following universities has received the Visitor's Award for the best Central University in India in Feb. 2017?  
 (a) Jawaharlal Nehru University  
 (b) Banaras Hindu University  
 (c) Tezpur University  
 (d) University of Hyderabad
49. Who among the following can be removed by the President without Parliament's resolution?  
 (a) Judge of a High Court  
 (b) Governor of a State  
 (c) Chief Election Commissioner  
 (d) Comptroller and Auditor-General
50. Which of the following come(s) within the ambit of the term 'corruption'?  
 1. Misuse of official position  
 2. Deviation from rules, laws and norms  
 3. Non-action when action is required  
 4. Harm to public good
- Select the correct answer from the code given below:  
 (a) 1 only (b) 1 and 2 only  
 (c) 1, 2 and 4 (d) 1, 2, 3 and 4

## Answer Key

Q.No.	Answer	Topic's Name	Chapter's Name
1	b	Teaching and learning	Teaching aptitude
2	a	Learner characteristics	Teaching aptitude
3	c	Teaching and learning	Teaching aptitude
4	d	Evaluation system	Teaching aptitude
5	c	Factors affecting teaching	Teaching aptitude
6	c	Types of research	Research aptitude
7	c	Methods of research	Research aptitude
8	c	Research	Research aptitude
9	d	Thesis and article writing	Research aptitude
10	d	Research ethics	Research aptitude
11	a	Fact Based	Comprehension
12	a	Fact Based	Comprehension
13	b	Fact Based	Comprehension
14	c	Fact Based	Comprehension
15	c	Inference based	Comprehension
16	c	Non-verbal communication	Communication
17	a	Classroom communication	Communication
18	b	Classroom communication	Communication
19	d	Effective communication	Communication
20	a	Classroom communication	Communication
21	a	Number series	Logical reasoning
22	b	Letter series	Logical reasoning
23	c	Codes	Logical reasoning
24	c	Relationships	Logical reasoning
25	a	Time and distance	Logical reasoning
26	c	Arguments	Logical reasoning
27	d	Syllogism	Logical reasoning
28	d	Deductive reasoning	Logical reasoning
29	c	Syllogism	Logical reasoning
30	a	Type of argument	Logical reasoning
31	a	Data interpretation	Data interpretation
32	d	Data interpretation	Data interpretation
33	a	Data interpretation	Data interpretation
34	a	Data interpretation	Data interpretation
35	a	Data interpretation	Data interpretation
36	d	Terminology	Information and communication technology
37	b	Hierarchy of data storage	Information and communication technology
38	d	Domains	Information and communication technology
39	c	Abbreviations	Information and communication technology
40	d	Terminology	Information and communication technology



41	a	Environmental issues	People, development and environment
42	b	Anthropogenic activities	People, development and environment
43	c	Natural hazards	People, development and environment
44	a	Anthropogenic activities	People, development and environment
45	d	Environmental friendly resource	People, development and environment
46	c	Governance and administration	Higher education system
47	a	Governance and administration	Higher education system
48	a	Governance and administration	Higher education system
49	b	Governance and administration	Higher education system
50	d	Corruption	Governance and administration

**ANSWERS WITH EXPLANATIONS**

1. **Option (b) is correct.**

Basis of difference	Teaching	Learning
Meaning	Process of impacting behaviour of learners	Gaining knowledge, skills, values etc.
Inter-connected	Teaching implies learning	Learning does not require teaching always
Knowledge	Delivering	Receiving
Process	Two way	One way
Act	Social	Social and personal

2. **Option (a) is correct.**

Learner's prior experience, Aptitude of the learner and stage of development facilitates teaching learning process.

3. **Option (c) is correct.**

Learning can be derived from any source and teaching is one of those sources.

4. **Option (d) is correct.**

Criterion-referenced testing is evaluation conducted based on the comparison of the performance of learners with the pre-defined rules or standards. Comparison is not done with other learners.

5. **Option (c) is correct.**

Instructional variety means the ability of the teacher to use various methods of teaching and being able to shift from one method to another easily.

6. **Option (c) is correct.**

Action research is a research type, which is cyclic in nature and focused on immediate solutions.

Process of action research → P.A.O.R.

Plan → Act → Observe → Reflect

7. **Option (c) is correct.**

Ex post Facto method of research is a process where a researcher studies the fact or an event which has already occurred, to study and understand the cause and effect of that event.

8. **Option (c) is correct.**

Conferences provide a platform where people working on a similar area of study can meet, and discuss their opinions and learnings on the area of study.

9. **Option (d) is correct.**

Bibliography and Appendices are included at the end of any thesis. They provide the information which is not entirely necessary to understand the findings of the thesis, but can be referred to if required by the reader.

10. **Option (d) is correct.**

Research ethics mainly influence the part where the researcher is reporting the findings of the study. Researchers cannot be biased at this part of thesis writing.

11. **Option (a) is correct.**

Poor people are dependent on natural resources and their financial resources are limited. Geographical attributes are also a factor that affect this situation.

12. **Option (a) is correct.**

Adaptation as a process helps society to adapt to uncertainties, climate changes, negative and positive impact of changes.

13. **Option (b) is correct.**

To address climate change developing countries need to implement the policies for adaptation at national levels.

14. **Option (c) is correct.**

Traditional knowledge should be used in synergy with the local and government methods and tool.

15. **Option (c) is correct.**

The main focus of the passage is on the adoption of climate change.

16. **Option (c) is correct.**

Proximal development refers to the area of difference between what a student can achieve without the guidance of the teacher, and what the student cannot achieve without the help of the teacher.

17. **Option (a) is correct.**

Spatial audio reproduction refers to creation of an imagined or original sound effect in the classroom.

18. **Option (b) is correct.**

Classroom communication should always be empathetic. Teachers should try to understand the skills and experience of the learners before imparting any idea.

19. **Option (d) is correct.**

Ice breaker techniques are used by speakers to make the audience comfortable and involved in the discussion. This makes the teaching learning process effective.

20. **Option (a) is correct.**

In a classroom, teachers should try to establish a viewpoint to ensure that the message is received by learners.

21. **Option (a) is correct.**

The difference between the two consecutive numbers of given are 5, 9, 13, 17.

The difference between the numbers of the second series is 4 (5-9-13-17).

Hence, adding 4 to 17 is 21.

Adding 21 to 45 is 66.

22. **Option (b) is correct.**

Calculating the difference between the Alphabets of the series:

A0B1D

D2G3K

H4M5S

M6T7B

So, the next term can be S8B9L

23. **Option (c) is correct.**

COVALENT is coded as BWPDUOFM.

If we break COVA-LENT and BWPDUO-FM in two parts, it can be noted that these parts are related when the parts of the second alphabet are flipped.

COVA-DPWB

LENT-MFOU

The alphabets are in sequences, like CD, OP, VW, AB, LM, EF, NO, TU.

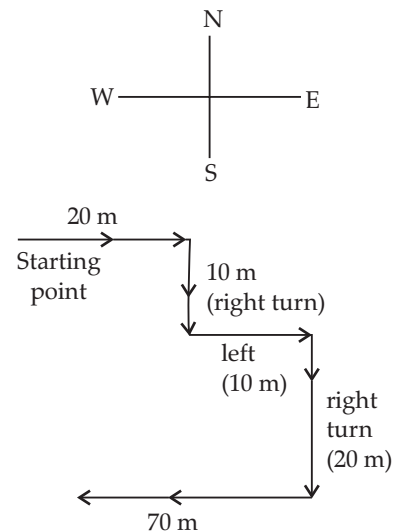
Hence, ELEPHANT will be QFMFUOBI.

24. **Option (c) is correct.**

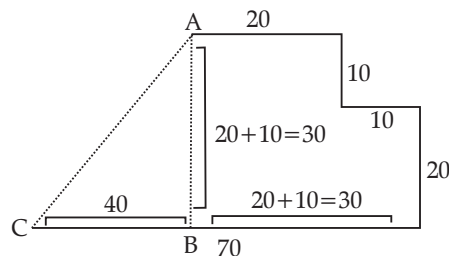
Uncle of Rakesh's son will be Rakesh's brother.

Hence, his father will be Rakesh's father.

25. **Option (a) is correct.**



These type of questions are based on practically imagination that will be required for understanding left and right turn.



By theorem  $AC^2 = AB^2 + CB^2$

$$AC^2 = 40^2 + 30^2$$

$$AC^2 = 1600 + 900$$

$$AC = \sqrt{2500}$$

$$AC = \boxed{50}$$

He is 50 m far from starting point.

**26. Option (c) is correct.**

Argument is a reason which is given in support of a theory or an idea.

**27. Option (d) is correct.**

Almost all honest people do suffer and Honest people hardly suffer, can be true together but cannot be false together.

**28. Option (d) is correct.**

A deductive argument will be invalid if its conclusion is false but the premise is true.

**29. Option (c) is correct.**

All bats are mammals

No birds are Bats.

Hence, only conclusion- No bats are Birds can be drawn from it validly.

**30. Option (a) is correct.**

Analogical reasoning compares two statements in a way that if one statement is correct then the other will be correct.

**31. Option (a) is correct.**

Growth in population in 1961-71 =  $108.92/439.23 \times 100 = 24.79$

Growth in population in 1971-81 =  $135.17/548.15 \times 100 = 24.75$

Growth in population in 1981-91 =  $163.1/683.32 \times 100 = 23.86$

Growth in population in 1991-2001 =  $182.31/846.42 \times 100 = 21.53$

Growth in population in 2001-2011 =  $181.46/1028.73 \times 100 = 17.639$

**32. Option (d) is correct.**

Year	Car growth (%)	Two-wheeler growth (%)
1971	120	554
1981	70.08	354
1991	154.6	442
2001	138	171
2011	170.94	164.2

**33. Option (a) is correct.**

Growth in 1961-71 =  $3.72/3.1 \times 100 = 120$

Growth in 1971-81 =  $4.78/6.82 \times 100 = 70.08$

Growth in 1981-91 =  $17.94/11.6 \times 100 = 154.65$

Growth in 1991-2001 =  $41.04/29.54 \times 100 = 138.93$

Growth in 2001-2011 =  $120.65/70.58 \times 100 = 170.94$

Average growth rate =  $655.32/5 = 131$

**34. Option (a) is correct.**

Total vehicles in 2011 = 549.91

No. of passenger vehicles (4 wheelers) = Car and Buses =  $70.58 + 6.34 = 76.92$

$\therefore$  Required % =  $76.92/549.91 \times 100 = 14\%$

**35. Option (a) is correct.**

Two wheelers in 2011 = 1018.65 lakhs

Population in 2011 = 1210.19 millions

1 million = 10 lakh

Population in lakhs =  $1210.19 \times 10 = 12101.9$  Lakh

Per capita ownership =  $1018.65/12101.9 = 0.084$

**36. Option (d) is correct.**

URL is an address of the webpage. It specifies the location of the file on the network or internet.

**37. Option (b) is correct.**

8 bit = 1 bytes

Bit < Byte < Field < Record < Files < Database

**38. Option (d) is correct.**

Domain ".com" is normally used for profit making businesses.

**39. Option (c) is correct.**

The full form of USB is Universal Serial Bus.

**40. Option (d) is correct.**

1 Gigabyte is equal to one billion bytes.

**41. Option (a) is correct.**

Suspended fine particles are the major cause of respiratory diseases.

**42. Option (b) is correct.**

Smog occurs due to vehicle emissions, coal emissions, burning of agriculture material, fireworks, etc. Biomass is the waste from animals.

**43. Option (c) is correct.**

Ozone layer depletion does not affect occurrence of natural hazards. Depletion of ozone layer increases the UV radiation level on earth which can affect human health.

**44. Option (a) is correct.**

Chlorofluorocarbon is an artificial gas which is used in equipment like air conditioners, refrigerators, etc.

**45. Option (d) is correct.**

Hydrogen is the most environment friendly fuel in the given list, as it produces only water as the by-product. Production and storage of hydrogen is a difficult process.

**46. Option (c) is correct.**

Compulsory and free education is not the goal of higher education in India.

**47. Option (a) is correct.**

Miranda House, Delhi has been ranked as the best college in the country in 2017.

**48. Option (a) is correct.**

Jawahar Lal Nehru university has received the visitor's award for best central university in 2017.

**49. Option (b) is correct.**

Governor of the state can be removed by the president, without the consent of parliament.

**50. Option (d) is correct.**

Corruption means misuse of power, not following rules and any action that is harmful for the common public.

□□□

# UGC NET PAPER-1

## GENERAL APTITUDE

# Solved Paper January 2017

Time Allotted: 1 Hour

Maximum Marks: 100

### Important Instructions:

1. Each question carries 2 marks.
2. There are 50 questions to be attempted out of 60 questions.
3. Each item has four alternative responses marked (a), (b), (c) and (d). You have to darken the oval as indicated below on the correct response against each item.  
**Example:** where (c) is the correct response.
4. Your responses to the items are to be indicated in the **Answer Sheet**.
5. **Use of any calculator or log table etc., is prohibited.**
6. **Negative Marking: For each incorrect answer 0.5 marks shall be deducted.**

1. The principal of a school conducts an interview session of teachers and students with a view to explore the possibility of their enhanced participation in school programmes. This endeavour may be related to which type of research?

- (a) Evaluation Research
- (b) Fundamental Research
- (c) Action Research
- (d) Applied Research

2. In doing action research what is the usual sequence of steps?

- (a) Reflect, observe, plan, act
- (b) Plan, act, observe, reflect
- (c) Plan, reflect, observe, act
- (d) Act, observe, plan, reflect

3. Which sequence of research steps is logical in the list given below?

- (a) Problem formulation, Analysis, Development of Research design, Hypothesis making, Collection of data, Arriving at generalizations and conclusions.
- (b) Development of Research design, Hypothesis making, Problem formulation, Data analysis, Arriving at conclusions and data collection.
- (c) Problem formulation, Hypothesis making, Development of a Research design, Collection of data, Data analysis and formulation of generalizations and conclusions.

- (d) Problem formulation, Deciding about the sample and data collection tools, Formulation of hypothesis, Collection and interpretation of research evidence.

4. Below are given two sets – research methods (Set-I) and data collection tools (Set-II).

Match the two sets and indicate your answer by selecting the correct code:

Set-I (Research Methods)	Set-II (Data Collection Tools)
1. Experimental method	(i) Using primary and secondary sources
2. Ex post-facto method	(ii) Questionnaire
3. Descriptive survey method	(iii) Standardized tests
4. Historical method	(iv) Typical characteristic tests

### Codes:

- |     |       |       |       |      |
|-----|-------|-------|-------|------|
|     | 1     | 2     | 3     | 4    |
| (a) | (ii)  | (i)   | (iii) | (iv) |
| (b) | (iii) | (iv)  | (ii)  | (i)  |
| (c) | (ii)  | (iii) | (i)   | (iv) |
| (d) | (ii)  | (iv)  | (iii) | (i)  |

5. The issue of 'research ethics' may be considered pertinent at which stage of research?

- (a) At the stage of problem formulation and its definition

- (b) At the stage of defining the population of research
  - (c) At the stage of data collection and interpretation
  - (d) At the stage of reporting the findings.
6. In which of the following is the reporting format prescribed?
- (a) Doctoral level thesis
  - (b) Conference of researchers
  - (c) Workshops and seminars
  - (d) Symposia

**Direction for questions 7 to 12:**

Read the following passage carefully and answer the questions.

The last great war, which nearly shook the foundations of the modern world, had little impact on Indian literature beyond aggravating the popular revulsion against violence and adding to the growing disillusionment with the 'humane pretensions' of the Western World. This was eloquently voiced in Tagore's later poems and his last testament, *Crisis in Civilisation*. The Indian intelligentsia was in a state of moral dilemma. On the one hand, it could not help sympathising with England's dogged courage in the hour of peril, with the Russians fighting with their backs to the wall against the ruthless Nazi hordes, and with China groaning under the heel of Japanese militarism; on the other hand, their own country was practically under military occupation of their own soil, and an Indian army under Subhas Bose was trying from the opposite camp to liberate their country. No creative impulse could issue from such confusion of loyalties. One would imagine that the achievement of Indian independence in 1947, which came in the wake of the Allies' victory and was followed by the collapse of colonialism in the neighbouring countries of South-East Asia, would have released an upsurge of creative energy. No doubt it did, but unfortunately it was soon submerged in the great agony of partition, with its inhumane slaughter of the innocents and the uprooting of millions of people from their homeland, followed by the martyrdom of Mahatma Gandhi. These tragedies, along with Pakistan's invasion of Kashmir and its later atrocities in Bangladesh, did indeed provoke a poignant

writing, particularly in the languages of the regions most affected, Bengali, Hindi, Kashmiri, Punjabi, Sindhi and Urdu. But poignant or passionate writing does not by itself make great literature. What reserves of enthusiasm and confidence survived these disasters have been mainly absorbed in the task of national reconstruction and economic development. Great literature has always emerged out of chains of convulsions. Indian literature is richer today in volume, range and variety than it ever was in the past.

7. What was the impact of the last great war on Indian literature?
- (a) It had no impact.
  - (b) It aggravated popular revulsion against violence.
  - (c) It shook the foundations of literature.
  - (d) It offered eloquent support to the Western World.
8. What did Tagore articulate in his last testament?
- (a) Offered support to Subhas Bose.
  - (b) Exposed the humane pretensions of the Western World.
  - (c) Expressed loyalty to England.
  - (d) Encouraged the liberation of countries.
9. What was the stance of Indian intelligentsia during the period of great war?
- (a) Indifference to Russia's plight.
  - (b) They favoured Japanese militarism.
  - (c) They prompted creativity out of confused loyalties.
  - (d) They expressed sympathy for England's dogged courage.
10. Identify the factor responsible for the submergence of creative energy in Indian literature.
- (a) Military occupation of one's own soil
  - (b) Resistance to colonial occupation
  - (c) Great agony of partition
  - (d) Victory of Allies
11. What was the aftermath that survived tragedies in Kashmir and Bangladesh?
- (a) Suspicion of other countries
  - (b) Continuance of rivalry
  - (c) Menace of war
  - (d) National reconstruction

12. The passage has the message that  
 (a) Disasters are inevitable.  
 (b) Great literature emerges out of chains of convulsions.  
 (c) Indian literature does not have a marked landscape.  
 (d) Literature has no relation with war and independence.
13. Effective communication pre-supposes  
 (a) Non-alignment (b) Domination  
 (c) Passivity (d) Understanding
14. When verbal and non-verbal messages are contradictory, it is said that most people believe in  
 (a) indeterminate messages  
 (b) verbal messages  
 (c) non-verbal messages  
 (d) aggressive messages
15. The typical feature of an information-rich classroom lecture is in the nature of being  
 (a) Sedentary (b) Staggered  
 (c) Factual (d) Sectoral
16. Expressive communication is driven by  
 (a) Passive aggression  
 (b) Encoder's personality characteristics  
 (c) External clues  
 (d) Encoder-decoder contract
17. Positive classroom communication leads to  
 (a) Coercion (b) Submission  
 (c) Confrontation (d) Persuasion
18. Classroom communication is the basis of  
 (a) Social identity (b) External inanities  
 (c) Biased passivity (d) Group aggression
19. The missing term in the series 1, 4, 27, 16,?, 36, 343, ... is  
 (a) 30 (b) 49  
 (c) 125 (d) 81
20. The next term in the following series YEB, WFD, UHG, SKI will be  
 (a) TLO (b) QOL  
 (c) QLO (d) GQP
21. If A is coded as C, M as I, N as P, S as O, I as A, P as N, E as M, O as E and C as S, then the code of COMPANIES will be  
 (a) SPEINMOAC (b) NCPSEIOMA  
 (c) SMOPIEACN (d) SEINCPAMO
22. Among the following, identify the continuous type of data:  
 (a) Number of languages a person speaks  
 (b) Number of children in a household  
 (c) Population of cities  
 (d) Weight of students in a class
23. Ali buys a glass, a pencil box and a cup and pays ₹ 21 to the shopkeeper. Rakesh buys a cup, two pencil boxes and a glass and pays ₹ 28 to the shopkeeper. Preeti buys two glasses, a cup and two pencil boxes and pays ₹ 35 to the shopkeeper. The cost of 10 cups will be  
 (a) ₹ 40 (b) ₹ 60  
 (c) ₹ 80 (d) ₹ 70
24. Out of four cities given below three are alike in some manner while the fourth one is different. Identify the odd one  
 (a) Lucknow (b) Rishikesh  
 (c) Allahabad (d) Patna
25. Given below are some characteristics of reasoning. Select the code that states a characteristic which is not of deductive reasoning:  
 (a) The conclusion must be based on observation and experiment.  
 (b) The conclusion should be supported by the premise/premises.  
 (c) The conclusion must follow from the premise/premises necessarily.  
 (d) The argument may be valid or invalid.
26. If two standard form categorical propositions with the same subject and predicate are related in such a manner that if one is undetermined the other must be undetermined, what is their relation?  
 (a) Contrary (b) Subcontrary  
 (c) Contradictory (d) Sub-altern
27. Men and women may have different reproductive strategies but neither can be considered inferior or superior to the other, any more than a bird's wings can be considered superior or inferior to a fish's fins. What type of argument is it?  
 (a) Biological (b) Physiological  
 (c) Analogical (d) Hypothetical
28. Among the following propositions two are related in such a way that they cannot both be true but can both be false. Select the code that states those two propositions.

**Propositions:**

- Every student is attentive.
- Some students are attentive.



- 3. Students are never attentive.
- 4. Some students are not attentive.

**Codes:**

- (a) 1 and 2                      (b) 1 and 3
- (c) 2 and 3                      (d) 3 and 4

29. Given below are two premises ((a) and (b)). From those two premises four conclusions (i), (ii), (iii) & (iv) are drawn. Select the code that states the conclusions validly drawn from the premises (taking singly or jointly.)

- Premises:** (a) Untouchability is a cursed.  
 (b) All hot pans are untouchable.

- Conclusions:** (i) All hot pans are curse.  
 (ii) Some untouchable things are hot pans.  
 (iii) All curses are untouchables.  
 (iv) Some curses are untouchability.

**Codes:**

- (a) (i) and (ii)                      (b) (ii) and (iii)
- (c) (iii) and (iv)                      (d) (ii) and (iv)

30. If the statement 'None but the brave wins the race' is false, which of the following statements can be claimed to be true?

Select the correct code:

- (a) All brave persons win the race.
- (b) Some persons who win the race are not brave.
- (c) Some persons who win the race are brave.
- (d) No person who wins the race is brave.

**Direction** for questions 31 to 33:

The table below embodies data on the sales revenue (₹ in lakh) generated by a publishing house during the years 2012-15 while selling books, magazines and journals as three categories of items. Answer the questions based on the data contained in the table.

Year Items	Sales Revenue (₹ in lakh)			
	2012	2013	2014	2015
Journals	46	47	45	44
Magazines	31	39	46	51
Books	73	77	78	78
Total				

31. In 2015, approximately what percent of total revenue came from books?  
 (a) 45%                      (b) 55%  
 (c) 35%                      (d) 25%

32. The number of years in which there was an increase in revenue from at least two categories of items, is

- (a) 0                                      (b) 1
- (c) 2                                      (d) 3

33. If the year 2016 were to show the same growth in terms of total sales revenue as the year 2015 over the year 2014, then the revenue in the year 2016 must be approximately:

- (a) ₹ 194 lakh                      (b) ₹ 187 lakh
- (c) ₹ 172 lakh                      (d) ₹ 177 lakh

**Direction for questions 34 & 36:**

A University professor maintains data on MCA students tabulated by performance and gender of the students. The data is kept on a computer hard disk, but accidentally some of it is lost because of a computer virus. Only the following could be recovered:

Performance/ Gender	Number of MCA Students			
	Average	Good	Excellent	Total
Male			10	
Female				32
Total		30		

Panic buttons were pressed but to no avail. An expert committee was formed, which decided that the following facts were self evident:

- (a) Half the students were either excellent or good.
- (b) 40% of the students were females.
- (c) One-third of the male students were average.

Answer questions 34-36 based on the data given above.

34. How many female students are excellent?  
 (a) 0                                      (b) 8  
 (c) 16                                      (d) 32

35. What proportion of female students are good?  
 (a) 0                                      (b) 0.25  
 (c) 0.50                                      (d) 0.75

36. Approximately, what proportion of good students are male?  
 (a) 0                                      (b) 0.73  
 (c) 0.43                                      (d) 0.27

37. Which of the following statement(s) is/are TRUE?

S1: The decimal number 11 is larger than the hexadecimal number 11.

S2: In the binary number 1110.101, the fractional part has the decimal value as 0.625.

- (a) S1 only                      (b) S2 only
- (c) Both S1 and S2                      (d) Neither S1 nor S2

38. Read the following two statements:

I: Information and Communication Technology (ICT) is considered a subset of Information Technology (IT).

II: The 'right to use' a piece of software is termed as copyright.

Which of the above statement(s) is/are CORRECT?

- (a) Both I and II      (b) Neither I nor II  
(c) II only              (d) I only
39. Which of the following correctly lists computer memory types from highest to lowest speed?
- (a) Secondary Storage; Main Memory (RAM); Cache Memory; CPU Registers  
(b) CPU Registers; Cache Memory; Secondary Storage; Main Memory (RAM)  
(c) CPU Registers; Cache Memory; Main Memory (RAM); Secondary Storage  
(d) Cache Memory; CPU Registers; Main Memory (RAM); Secondary Storage
40. Which of the following is a characteristic of Web2.0 applications?
- (a) Multiple users schedule their time to use Web2.0 applications one by one.  
(b) Web2.0 applications are focused on the ability for people to collaborate and share information online.  
(c) Web2.0 applications provide users with content rather than facilitating users to create it.  
(d) Web2.0 applications use only static pages.
41. With regard to a word processing software, the process of combining static information in a publication together with variable information in a data source to create one merged publication is called
- (a) Electronic mail      (b) Data sourcing  
(c) Mail merge          (d) Spam mail
42. DVD technology uses an optical media to store the digital data. DVD is an acronym for
- (a) Digital Vector Disc  
(b) Digital Volume Disc  
(c) Digital Versatile Disc  
(d) Digital Visualization Disc
43. **Assertion (A):** Sustainable development is critical to the well being of human society.
- Reason (R):** Environmentally sound policies do not harm the environment or deplete the natural resources.

Choose the correct code:

- (a) Both (A) and (R) are correct and (R) is the correct explanation of (A).  
(b) Both (A) and (R) are correct, but (R) is not the correct explanation of (A).  
(c) (A) is true and (R) is false.  
(d) (A) is false and (R) is true.
44. The dominant source of pollution due to oxides of nitrogen ( $\text{NO}_x$ ) in urban areas is
- (a) road transport  
(b) commercial sector  
(c) energy use in industry  
(d) power plants
45. Which of the following is not a water-borne disease?
- (a) Typhoid              (b) Hepatitis  
(c) Cholera              (d) Dengue
46. Indian government's target for power production from small hydro projects by the year 2022 is
- (a) 1 Giga-Watt          (b) 5 Giga-Watt  
(c) 10 Giga-Watt        (d) 15 Giga-Watt
47. In which country, the recent international agreement on phasing out Hydro Fluoro Carbons (HFCs) was signed?
- (a) Rwanda              (b) Morocco  
(c) South Africa        (d) Algeria
48. Which of the following natural hazards is not hydro-meteorological?
- (a) Snow avalanche    (b) Sea erosion  
(c) Tropical cyclone    (d) Tsunami
49. Which of the following are the demerits of globalisation of higher education?
1. Exposure to global curriculum
  2. Promotion of elitism in education
  3. Commodification of higher education
  4. Increase in the cost of education
- Select the correct answer from the codes given below:
- Codes:**
- (a) 1 and 4              (b) 1, 3 and 4  
(c) 2, 3 and 4          (d) 1, 2, 3 and 4
50. Which of the following statements are correct about deemed universities?
1. The Governor of the State is the chancellor of deemed universities.
  2. They can design their own syllabus and course work.

3. They can frame their own guidelines regarding admission and fees.
4. They can grant degrees.

Select the correct answer from the codes given below:

**Codes:**

- (a) 1, 2 and 3                      (b) 1, 3 and 4  
(c) 1, 3 and 4                      (d) 1, 2, 3 and 4

51. The purpose of value education is best served by focussing on

- (a) Cultural practices prevailing in the society.
- (b) Norms of conduct laid down by a social group.
- (c) Concern for human values.
- (d) Religious and moral practices and instructions.

52. Which of the following statements are correct?

1. Rajya Sabha is a permanent House which can be dissolved only during national emergency.
2. Rajya Sabha does not represent the local interests of the States.
3. Members of the Rajya Sabha are not bound to vote at the dictates of the states they represent.
4. No Union territory has a representative in the Rajya Sabha.

Select the correct answer from the codes given below:

**Codes:**

- (a) 1 and 4                              (b) 2 and 3  
(c) 2, 3 and 4                          (d) 1, 2, 3 and 4

53. Which of the following are not necessarily the immediate consequences of the proclamation of the President's Rule in a State?

1. Dissolution of the State Assembly.
2. Removal of the Council of Ministers in the State.
3. Takeover of the State administration by the Union Government.
4. Appointment of a new Chief Secretary.

Select the correct answer from the codes given below:

**Codes:**

- (a) 1 and 4                              (b) 1, 2 and 3  
(c) 1, 2, 3 and 4                      (d) 2 and 3

54. Instead of holding the office during the pleasure of the President, who among the following hold(s) office during good behaviour?

1. Governor of a State
2. Attorney General of India
3. Judges of the High Court
4. Administrator of a Union Territory

Select the correct answer from the codes given below:

**Codes:**

- (a) 1 only                                  (b) 3 only  
(c) 1 and 3                                (d) 1, 2, 3 and 4

55. Which of the following sets of statements represents acceptable propositions in respect of teaching-learning relationships? Choose the correct code to indicate your answer.

- (i) When students fail the test/fail test, it is the teacher who fails.
- (ii) Every teaching must aim at ensuring learning.
- (iii) There can be teaching without learning taking place.
- (iv) There can be no learning without teaching.
- (v) A teacher teaches but learns also.
- (vi) Real learning implies rote learning.

**Codes:**

- (a) (ii), (iii), (iv) and (v)  
(b) (i), (ii), (iii) and (v)  
(c) (iii), (iv), (v) and (vi)  
(d) (i), (ii), (v) and (vi)

56. **Assertion (A):** Learning is a life long process.

**Reason (R):** Learning to be useful must be linked with life processes.

Choose the correct answer from the following code:

- (a) Both (A) and (R) are true and (R) is the correct explanation of (A).
- (b) Both (A) and (R) are true, but (R) is not the correct explanation of (A).
- (c) (A) is true, but (R) is false.
- (d) (A) is false, but (R) is true.

57. Effectiveness of teaching has to be judged in terms of

- (a) Course coverage
- (b) Students' interest
- (c) Learning outcomes of students
- (d) Use of teaching aids in the classroom

58. In which teaching method is the learner participation made optimal and proactive?
- (a) Discussion method
  - (b) Buzz session method
  - (c) Brainstorming session method
  - (d) Project method
59. One of the most powerful factors affecting teaching effectiveness is related to the
- (a) Social system of the country
  - (b) Economic status of the society
  - (c) Prevailing political system
  - (d) Educational system
60. **Assertion (A):** Formative evaluation tends to accelerate the pace of learning.

**Reason (R):** As against summative evaluation, formative evaluation is highly reliable.

Choose the correct answer from the following code:

- (a) Both (A) and (R) are true and (R) is the correct explanation of (A).
- (b) Both (A) and (R) are true, but (R) is not the correct explanation of (A).
- (c) (A) is true, but (R) is false.
- (d) (A) is false, but (R) is true.

□□□

## Answer Key

Q.No.	Answer	Topic's Name	Chapter's Name
1	c	Type of research	Research aptitude
2	b	Type of research	Research aptitude
3	c	Steps of research	Research aptitude
4	b	Methods of research	Research aptitude
5	c	Research ethics	Research aptitude
6	a	Thesis writing	Research aptitude
7	d	Inference based	Comprehension
8	b	Fact based	Comprehension
9	c	Fact based	Comprehension
10	c	Inference based	Comprehension
11	d	Fact based	Comprehension
12	b	Inference based	Comprehension
13	d	Effective communication	Communication
14	c	Verbal and non-verbal communication	Communication
15	c	Classroom communication	Communication
16	b	Expressive communication	Communication
17	d	Effective communication	Communication
18	a	Classroom communication	Communication
19	c	Number series	Mathematical terms and reasoning
20	b	Letter series	Logical reasoning
21	d	Codes	Logical reasoning
22	b	Mathematical aptitudes	Mathematical terms and reasoning
23	d	Mathematical aptitudes	Mathematical terms and reasoning
24	a	Odd one out	People, development and Environment
25	a	Arguments	Logical reasoning
26	c	Propositions	Logical reasoning
27	c	Analogies	Logical reasoning
28	b	Syllogism	Logical reasoning
29	d	Premises & Conclusions	Logical reasoning
30	b	Syllogism	Logical reasoning
31	a	Data interpretation	Data interpretation
32	c	Data interpretation	Data interpretation
33	d	Data interpretation	Data interpretation
34	a	Data interpretation	Data interpretation
35	b	Data interpretation	Data interpretation
36	b	Data interpretation	Data interpretation
37	b	Binary numbers	Information and computer technology
38	b	Terminology	Information and computer technology
39	c	Types of memories	Information and computer technology

40	b	Basics of internet	Information and computer technology
41	c	Terminology	Information and computer technology
42	c	Abbreviations	Information and computer technology
43	b	Development and environment	People, development and environment
44	a	Environmental issues	People, development and environment
45	d	Impact of pollutant	People, development and environment
46	b	Natural resources	People, development and environment
47	a	International agreement	People, development and environment
48	d	Natural hazards	People, development and environment
49	c	Higher education system	Higher education system
50	b	Governance	Higher education system
51	c	Value education	Higher education system
52	b	Governance	Higher education system
53	a	Governance	Higher education system
54	b	Governance	Higher education system
55	b	Factors affecting teaching	Teaching aptitude
56	b	Learners	Teaching aptitude
57	c	Factors affecting teaching	Teaching aptitude
58	d	Methods of teaching	Teaching aptitude
59	d	Factors affecting teaching	Teaching aptitude
60	c	Evaluation system	Teaching aptitude

**ANSWERS WITH EXPLANATIONS**

1. **Option (c) is correct.**  
Action research is conducted within the duration of a job, to evaluate any prevalent situation and suggest corrections.
2. **Option (b) is correct.**  
The steps for conducting action research are plan, act, observe and reflect.
3. **Option (c) is correct.**  
The accurate sequence of research is:
  1. Identification of problem
  2. Formulation of hypothesis
  3. Developing research design
  4. Data collection
  5. Analysis of data
  6. Generalization of findings
  7. Conclusion of the study
4. **Option (b) is correct.**
  1. Experimental method of research involves conducting few standardized tests.
  2. The Ex-Post facto method is conducted after any incident has happened to understand the various characteristics and factors.
  3. Descriptive survey method involves using questionnaires to collect data from predefined population.
  4. Historical methods of research involve studying already existing secondary data about any concept and using primary data for better insight.
5. **Option (c) is correct.**  
Research ethics is most important at the stage of data collection, analysis and interpretation.
6. **Option (a) is correct.**  
While writing a doctoral level thesis, the researcher has to follow a strict pre-defined format of report writing.
7. **Option (d) is correct.**  
The impact of the last great war further deepens the hatred towards violence and strengthens the support towards western world. This was described in the poems of Tagore and in his last documentary crisis in civilization.
8. **Option (b) is correct.**  
In his last documentary, Tagore exposed the misconception about western world.
9. **Option (c) is correct.**  
Indian intellectual society expected creativity from confused loyalties.
10. **Option (c) is correct.**  
The creative energy in India after partition was vanished because of partition and losses of human lives due to it.
11. **Option (d) is correct.**  
The enthusiasm and confidence that was left after partition was channelled towards economic development and reconstruction of the nation.
12. **Option (b) is correct.**  
The passage highlights the idea that great literature is developed on the foundation of a series of convulsions.
13. **Option (d) is correct.**  
The basis of good communication is the ability to understand on the part of the learner.
14. **Option (c) is correct.**  
It is believed that non verbal communication is often more trustworthy than what is being conveyed verbally.
15. **Option (c) is correct.**  
Any lecture is more impactful and lasting when it is based on the facts.
16. **Option (b) is correct.**  
The personality traits of the encoder enhance the effective delivery of the message.

**17. Option (d) is correct.**

Good classroom communication will persuade the audience to engage in the process of teaching and learning.

**18. Option (a) is correct.**

Good classroom communication with peers will help learners get a positive social identity.

**19. Option (c) is correct.**

The numbers in the series are square and cubes of consecutive numbers alternatively.

$$(1)^3 = 1$$

$$(2)^2 = 4$$

$$(3)^3 = 27$$

$$(4)^2 = 16$$

$$(6)^2 = 36$$

$$(7)^3 = 343$$

Hence, the missing number will be cube of 5 *i.e.*,  $(5)^3 = 125$

**20. Option (b) is correct.**

The first terms in all series are alternate alphabets in backwards.

Y-W-U-S

The second term in all the series is in the forward sequence but the gap is increasing by one number.

E-F-1-H-2-K

The third term in all the series is in the forward sequence but the gap is by 1 or by 2 in an alternate manner.

B-1-D-2-G-1-I

Hence, the next term will be QOL

**21. Option (d) is correct.**

C is coded as S

O is coded as E

M is coded as I

P is coded as N

A is coded as C

N is coded as P

I is coded as A

E is coded as M

S is coded as O

**22. Option (b) is correct.**

Continuous data can have any value within the predefined range. This type of data can be in decimal like height 5'2, weight 5.5 kg etc.

**23. Option (d) is correct.**

Let assume, Price of glass = A

Price of Box = B

Price of Cup = C

Now putting it in equations,

$$\text{Equation 1: } A + B + C = 21$$

$$\text{Equation 2: } A + 2B + C = 28$$

By solving this equation,  $B = 7$

$$\text{Equation 3: } 2A + 2B + C = 35$$

By putting values of B in equation 3, we get

$$2A + C = 21$$

$$A = 21 - C/2$$

Now A and B in Equation 1, we get

$$21 - C/2 + 7 + C = 21$$

$$C (\text{Price of cup}) = 7$$

Hence, price of 10 cups = 70

**24. Option (a) is correct.**

Rishikesh, Allahabad and Patna are located on the banks of river Ganga. Lucknow is located on the banks of river Gomti.

**25. Option (a) is correct.**

Deductive reasoning goes from general to specific. First we have a theory than arguments are given to support the premises.

**26. Option (c) is correct.**

Contradictory propositions are related in such a manner that if one statement is true than the other must be false.

**27. Option (c) is correct.**

Analogical arguments compare one situation to another similar situation, in such a manner that if one is true than the other is also assumed to be true. For example- Fire has smoke so where there is smoke, there is fire.

**28. Option (b) is correct.**

Every student is attentive.

Students are never attentive.

Perfectly positive and perfectly negative statements can not be true together but can be false.

**29. Option (d) is correct.**

Some untouchable things are hot pans and Some curses are untouchables that can be validly drawn.

**30. Option (b) is correct.**

If the statement "None but the brave wins the race" is false, then the statement "Some persons who win the race are not brave" will be true.



31. **Option (a) is correct.**  
 Total sales in 2015 = 173 lacs  
 Sales of Books in 2015 = 78 lacs  
 Percentage of sales revenue from books =  $78/173 \times 100 = 45\%$
32. **Option (c) is correct.**  
 Sales of Journal increased in the year 2012-2013  
 Sales of Magazines increased in the year 2012-2013, 2013-2014 and 2014-2015.  
 Sales of books increased in the year 2012-2013 and 2013-2014.
33. **Option (d) is correct.**  
 Total revenue in 2014 = 169 lacs  
 Total revenue in 2015 = 173 lacs  
 Growth rate in 2014-2015 = 4 lacs  
 If growth rate is same in 2015-2016 also, then it will be =  $173 + 4 = 177$  lacs
34. **Option (a) is correct.**  
 If 40% students are Female, which is = 32  
 Total students = 80  
 Total Male students = 48  
 Since half of students are good or excellent, it is = 40  
 If 30 students are good, then 10 students are Excellent.  
 Since 10 Male students are excellent, 0 Female students are excellent.
35. **Option (b) is correct.**  
 Average male students ( $1/3^{\text{rd}}$  of total) = 16  
 Good male students = 22  
 Good Female students = 8  
 Proportion of Good female students =  $8/32 = 0.25$
36. **Option (b) is correct.**  
 Total good students = 30  
 Good male students = 22  
 Proportion =  $22/30 = 0.73$
37. **Option (b) is correct.**  
 Same number in decimal number is always greater than same number in Hexadecimal. As decimal number has base 2 and hexa has base 6.
38. **Option (b) is correct.**  
 ICT is a part of IT. IT is not a part of ICT. Copyright is the right of not to be copied. Hence, both statements are wrong.
39. **Option (c) is correct.**  
 According to the speed, the CPU register is fastest, followed by cache. RAM is slower than Cache and it is faster than secondary memory.
40. **Option (b) is correct.**  
 Web2.0 includes websites and applications through which anyone can develop and share data created by them with other users.
41. **Option (c) is correct.**  
 By using word software, a document can be combined with the data file in such a way that every person receiving the mail will receive a customized document.
42. **Option (c) is correct.**  
 The full form of DVD is digital versatile disc.
43. **Option (b) is correct.**  
 Both the statements are true, but they cannot be related.
44. **Option (a) is correct.**  
 Passenger vehicles are the major source of nitrogen oxides and carbon monoxides.
45. **Option (d) is correct.**  
 Dengue is caused by mosquitoes. It is normally spread by female mosquitoes.
46. **Option (b) is correct.**  
 The target of Indian government is to produce 5 giga watt power production will be through small hydro projects.
47. **Option (a) is correct.**  
 In the Montreal Protocol, Rwanda 197 countries decided to reduce the consumption of hydro Fluoro carbon.
48. **Option (d) is correct.**  
 Tsunamis are caused by earthquakes and are not hydro meteorological disasters.
49. **Option (c) is correct.**  
 The demerits of globalization of higher education include elitism, commodification and increase in cost of education.
50. **Option (b) is correct.**  
 Deemed universities can frame their own syllabus, can give degrees and can frame their own rules. Governor is not the chancellor of deemed universities.

51. **Option (c) is correct.**  
Value education should be based on the concern for the wellbeing of people and human values.
52. **Option (b) is correct.**  
Rajya Sabha does not look after the welfare of the state and members of Rajya Sabha are not bound to vote according to the state they represent.
53. **Option (a) is correct.**  
The President's rule will result in the removal of the council of ministers and take over by the central government.
54. **Option (b) is correct.**  
The Attorney general of India holds the office during the pleasure of the president of India and compensation is decided by the president only.
55. **Option (b) is correct.**  
We can eliminate options 4 & 6. Learning can occur without teaching and Rote learning will never result in understanding.
56. **Option (b) is correct.**  
Learning is a life long process and learning should be related to life processes for better understanding. But these two statements cannot be related.
57. **Option (c) is correct.**  
Effectiveness of teaching can only be judged by the understanding of students and the outcome of the process.
58. **Option (d) is correct.**  
In the project method of learning, learners are more proactively involved.
59. **Option (d) is correct.**  
The education system and policies being followed affect the effectiveness of the teaching learning process.
60. **Option (c) is correct.**  
The purpose of summative and formative evaluations is different and can be used in combination for a better learning process.

□□□

# UGC NET PAPER-1

# GENERAL APTITUDE

# Solved Paper June 2016

Time Allotted: 1 Hour

Maximum Marks: 100

## Important Instructions:

- Each question carries 2 marks.
- There are 50 questions to be attempted out of 60 questions.
- Each item has four alternative responses marked (a), (b), (c) and (d). You have to darken the oval as indicated below on the correct response against each item.  
**Example:** where (c) is the correct response.
- Your responses to the items are to be indicated in the **Answer Sheet**.
- Use of any calculator or log table etc., is prohibited.**
- Negative Marking: For each incorrect answer 0.5 marks shall be deducted.**

1. Select the alternative which consists of positive factors contributing to effectiveness of teaching:

### List of factors:

- Teacher's knowledge of the subject.
- Teacher's socio-economic background.
- Communication skill of the teacher.
- Teacher's ability to please the students.
- Teacher's personal contact with students.
- Teacher's competence in managing and monitoring the classroom transactions.

### Codes:

- (a) 2, 3 and 4                      (b) 3, 4 and 6  
(c) 2, 4 and 5                      (d) 1, 3 and 6

2. The use of teaching aids is justified on the grounds of
- (a) attracting students' attention in the class room.  
(b) minimising indiscipline problems in the classroom.  
(c) optimising learning outcomes of students.  
(d) effective engagement of students in learning tasks.
3. **Assertion (A):** The purpose of higher education is to promote critical and creative thinking abilities among students.

**Reason (R):** These abilities ensure job placements.

Choose the correct answer from the following code:

- (a) Both (A) and (R) are true and (R) is the correct explanation of (A).

(b) Both (A) and (R) are true but (R) is not the correct explanation of (A).

(c) (A) is true but (R) is false.

(d) (A) is false but (R) is true.

4. Match the items of the first set with that of the second set in respect of the evaluation system.

### Choose the correct code:

Set-I	Set-II
1. Formative evaluation	(i) Evaluating cognitive and co-cognitive aspects with regularity
2. Summative evaluation	(ii) Tests and their interpretations based on a group and certain yardsticks
3. Continuous and comprehensive evaluation	(iii) Grading the final learning outcomes
4. Norm and criterion referenced tests	(iv) Quizzes and discussions

### Codes:

- |           |       |       |      |
|-----------|-------|-------|------|
| 1         | 2     | 3     | 4    |
| (a) (iv)  | (iii) | (i)   | (ii) |
| (b) (i)   | (ii)  | (iii) | (iv) |
| (c) (iii) | (iv)  | (ii)  | (i)  |
| (d) (i)   | (iii) | (iv)  | (ii) |

5. A researcher intends to explore the effect of possible factors for the organization of effective mid-day meal interventions. Which research method will be most appropriate for this study?
  - (a) Historical method
  - (b) Descriptive survey method
  - (c) Experimental method
  - (d) Ex-post-facto method
6. Which of the following is an initial mandatory requirement for pursuing research?
  - (a) Developing a research design
  - (b) Formulating a research question
  - (c) Deciding about the data analysis procedure
  - (d) Formulating a research hypothesis
7. The format of thesis writing is the same as in
  - (a) preparation of a research paper/article
  - (b) writing of seminar presentation
  - (c) a research dissertation
  - (d) presenting a workshop/conference paper
8. In the qualitative research paradigm, which of the following features may be considered critical?
  - (a) Data collection with standardised research tools.
  - (b) Sampling design with probability sample techniques.
  - (c) Data collection with bottom-up empirical evidence.
  - (d) Data gathering to take place with top-down systematic evidence.
9. From the following list of statements identify the set which has negative implications for 'research ethics':
  - (i) A researcher critically looks at the findings of another research.
  - (ii) Related studies are cited without proper references.
  - (iii) Research findings are the basis for policy making.
  - (iv) Conduct of the practitioner is screened in terms of reported research evidence.
  - (v) A research study is replicated with a view to verify the evidence from other researches.
  - (vi) Both policy making and policy implementing processes are regulated in terms of preliminary studies.

**Codes:**

- (a) (i), (ii) and (iii)      (b) (ii), (iii) and (iv)
  - (c) (ii), (iv) and (vi)      (d) (i), (iii) and (v)
10. In a research on the effect of child-rearing practices on stress-proneness of children in completing school projects, the hypothesis

formulated is that 'child rearing practices do influence stress-proneness'. At the data-analysis stage a null hypothesis is advanced to find out the tenability of the research hypothesis. On the basis of the evidence available, the null hypothesis is rejected at 0.01 level of significance. What decision may be warranted in respect of the research hypothesis?

- (a) The research hypothesis will also be rejected.
- (b) The research hypothesis will be accepted.
- (c) Both the research hypothesis and the null hypothesis will be rejected.
- (d) No decision can be taken in respect of the research hypothesis.

**Direction for questions 11 to 16:**

Read the following passage carefully and answer the question.

In terms of labour, for decades the relatively low cost and high quality of Japanese workers conferred considerable competitive advantage across numerous durable goods and consumer electronics industries (*e.g.*, machinery, automobiles, televisions, radios). Then labour-based advantages shifted to South Korea, then to Malaysia, Mexico and other nations. Today, China appears to be capitalizing best on the basis of labour. Japanese firms still remain competitive in markets for such durable goods, electronics and other products, but the labour force is no longer sufficient for competitive advantage over manufacturers in other industrializing nations. Such shifting of labour-based advantage is clearly not limited to manufacturing industries. Today, a huge number of IT and service jobs are moving from Europe and North America to India, Singapore, and like countries with relatively well-educated, low-cost workforces possessing technical skills. However, as educational levels and technical skills continue to rise in other countries, India, Singapore, and like nations enjoying labour-based competitive advantage today are likely to find that such an advantage cannot be sustained through emergence of new competitors.

In terms of capital, for centuries the days of gold coins and later even paper money restricted financial flows. Subsequently regional concentrations were formed where large banks, industries and markets coalesced. But today capital flows internationally at rapid speed. Global commerce no longer requires regional interactions among business players. Regional capital concentrations in places such

as New York, London and Tokyo still persist, of course, but the capital concentrated there is no longer sufficient for competitive advantage over other capitalists distributed worldwide. Only if an organization is able to combine, integrate and apply its resources (*e.g.*, Land, labour, capital, IT) in an effective manner that is not readily imitable by competitors can such an organization enjoy competitive advantage sustainable overtime.

In a knowledge-based theory of the firm, this idea is extended to view organizational knowledge as a resource with at least the same level of power and importance as the traditional economic inputs. An organization with superior knowledge can achieve competitive advantage in markets that appreciate the application of such knowledge. Semiconductors, genetic engineering, pharmaceuticals, software, military warfare, and like knowledge-intensive competitive arenas provide both time-proven and current examples. Consider semiconductors (*e.g.*, computer chips), which are made principally of sand and common metals. These ubiquitous and powerful electronic devices are designed within common office buildings, using commercially available tools, and fabricated within factories in many industrialized nations. Hence, land is not the key competitive resource in the semiconductor industry.

Based on the passage answer the following questions:

11. Which country enjoyed competitive advantages in the automobile industry for decades?
  - (a) South Korea
  - (b) Japan
  - (c) Mexico
  - (d) Malaysia
12. Why labour-based competitive advantages of India and Singapore cannot be sustained in IT and service sectors?
  - (a) Due to diminishing levels of skill.
  - (b) Due to capital-intensive technology making inroads.
  - (c) Because of new competitors.
  - (d) Because of shifting of labour-based advantage in manufacturing industries.
13. How can an organisation enjoy competitive advantage and sustainable overtime?
  - (a) Through regional capital flows.
  - (b) Through regional interactions among business players.
  - (c) By making large banks, industries and markets coalesced.
  - (d) By effective use of various instrumentalities.
14. What is required to ensure competitive advantages in specific markets?
  - (a) Access to capital
  - (b) Common office buildings
  - (c) Superior knowledge
  - (d) Common metals
15. The passage also mentions about the trend of
  - (a) Global financial flow
  - (b) Absence of competition in manufacturing industry
  - (c) Regionalisation of capitalists
  - (d) Organizational incompatibility
16. What does the author lay stress on in the passage?
  - (a) International commerce
  - (b) Labour-Intensive industries
  - (c) Capital resource management
  - (d) Knowledge-driven competitive advantage
17. Imagine you are working in an educational institution where people are of equal status. Which method of communication is best suited and normally employed in such a context?
  - (a) Horizontal communication
  - (b) Vertical communication
  - (c) Corporate communication
  - (d) Cross communication
18. Identify the important element a teacher has to take cognizance of while addressing students in a classroom.
  - (a) Avoidance of proximity
  - (b) Voice modulation
  - (c) Repetitive pause
  - (d) Fixed posture
19. What are the barriers to effective communication?
  - (a) Moralising, being judgemental and comments of consolation
  - (b) Dialogue, summary and self-review
  - (c) Use of simple words, cool reactions and defensive attitude
  - (d) Personal statements, eye contact and simple narration
20. The choice of communication partners is influenced by factors of
  - (a) Proximity, utility, loneliness
  - (b) Utility, secrecy, dissonance
  - (c) Secrecy, dissonance, deception
  - (d) Dissimilarity, dissonance, deviance

21. As a teacher, select the best option to ensure your effective presence in the classroom.
- Use of peer command
  - Making aggressive statements
  - Adoption of well-established posture
  - Being authoritarian
22. Every communicator has to experience
- Manipulated emotions
  - Anticipatory excitement
  - The issue of homophiles
  - Status dislocation
23. In certain code, SELECTION is coded as QJCARGML. The code of AMERICANS will be
- YKCPGAYLQ
  - BNFSJDBMR
  - QLYAGPCKY
  - YQKLCYPAG
24. In the series  
3, 11, 23, 39, 59, .....  
The next term will be
- 63
  - 73
  - 83
  - 93
25. Two railway tickets from city A to B and three tickets from city A to C cost ₹ 177. Three tickets from city A to B and two tickets from city A to C cost ₹ 173. The fare for city B from city A will be ₹
- 25
  - 27
  - 30
  - 33
26. A person walks 10 m in front and 10 m to the right. Then every time turning to his left, he walks 5, 15 and 15 m respectively. How far is he now from his starting point?
- 20 m
  - 15 m
  - 10 m
  - 5 m
27. A is sister of B. F is daughter of G. C is mother of B. D is father of C. E is mother of D. A is related to D as
- Grand daughter
  - Daughter
  - Daughter-in-law
  - Sister
28. In the series  
AB, EDC, FGHI, ....?....., OPQRST, the missing term is
- JKLMN
  - JMKNL
  - NMLKJ
  - NMKLJ
29. Among the following propositions two are related in such a way that one is the denial of the other. Which are those propositions? Select the correct code:
- Propositions:**
- All women are equal to men
  - Some women are equal to men
  - Some women are not equal to men
  - No women are equal to men
- Codes:**
- 1 and 2
  - 1 and 4
  - 3 and 4
  - 1 and 3
30. If the proposition 'All thieves are poor' is false, which of the following propositions can be claimed certainly to be true?
- Propositions:**
- Some thieves are poor.
  - Some thieves are not poor.
  - No thief is poor.
  - No poor person is a thief.
31. Consider the following statement and select the correct code stating the nature of the argument involved in it:
- To suppose that the earth is the only populated world in infinite space is as absurd as to assert that in an entire field of millet only one grain will grow.
- Astronomical
  - Anthropological
  - Deductive
  - Analogical
32. Select the code which is not correct about Venn diagram:
- Venn diagram represents propositions as well as classes.
  - It can provide a clean method of notation.
  - It can be either valid or invalid.
  - It can provide the direct method of testing the validity.
33. Select the code which is not correct in the context of deductive argument with two premises:
- An argument with one true premise, one false premise and a false conclusion may be valid.
  - An argument with two true premises and a false conclusion may be valid.
  - An argument with one true premise, one false premise and a true conclusion may be valid.
  - An argument with two false premises and a false conclusion may be valid.

34. Given below are two premises and four conclusions are drawn from them (taking singly or together). Select the code that states the conclusions validly drawn.

**Premises:** (i) All religious persons are emotional.  
(ii) Ram is a religious person.

**Conclusions:** (a) Ram is emotional.  
(b) All emotional persons are religious.  
(c) Ram is not a non-religious person.  
(d) Some religious persons are not emotional.

**Codes:**

- (a) 1, 2, 3 and 4  
(b) 1 only  
(c) 1 and 3 only  
(d) 2 and 3 only

**Direction for question 35 to 37:**

The following table shows the percentage profit (%) earned by two companies A and B during the years 2011-2015. Answer the questions based on the data contained in the table.

**Profit earned by two companies**

Year	Percentage Profit (%)	
	A	B
2011	20	30
2012	35	40
2013	45	35
2014	40	50
2015	25	35

Where, percent (%) Profit

$$= \frac{\text{Income} - \text{Expenditure}}{\text{Expenditure}} \times 100$$

35. If the total expenditure of the two companies was ₹ 9 lakh in the year 2012 and the expenditure of A and B were in the ratio 2:1, then what was the income of the company A in that year?  
(a) ₹ 9.2 lakh (b) ₹ 8.1 lakh  
(c) ₹ 7.2 lakh (d) ₹ 6.0 lakh
36. What is the average percentage profit earned by the company B?  
(a) 35% (b) 42%  
(c) 38% (d) 40%

37. In which year, the percentage profit earned by the company B is less than that of company A?  
(a) 2012 (b) 2013  
(c) 2014 (d) 2015

**Direction for question 38 to 40:**

The following table shows the number of people in different age groups who responded to a survey about their favourite style of music. Use this information to answer the questions that follow to the nearest whole percentage.

Age/ Style of Music	Number of people		
	(Years) 15-20	(Years) 21-30	(Years) 31+
Classical	6	4	17
Pop	7	5	5
Rock	6	12	14
Jazz	1	4	11
Blues	2	3	15
Hip-Hop	9	3	4
Ambient	2	2	2

38. Approximately what percentage of the total sample were aged 21-30?  
(a) 31% (b) 23%  
(c) 25% (d) 14%
39. Approximately what percentage of the total sample indicates that Hip-Hop is their favourite style of music?  
(a) 6% (b) 8%  
(c) 14% (d) 12%
40. What percentage of respondents aged 31+ indicated a favourite style other than classical music?  
(a) 64% (b) 60%  
(c) 75% (d) 50%
41. The statement "the study, design, development, implementation, support or management of computer-based information systems, particularly software applications and computer hardware" refers to  
(a) Information Technology (IT)  
(b) Information and Collaborative Technology (ICT)  
(c) Information and Data Technology (IDT)  
(d) Artificial Intelligence (AI)
42. If the binary equivalent of the decimal number 48 is 110000, then the binary equivalent of the decimal number 51 is given by  
(a) 110011 (b) 110010  
(c) 110001 (d) 110100

43. The process of copying files to a CD-ROM is known as  
 (a) Burning (b) Zipping  
 (c) Digitizing (d) Ripping
44. An unsolicited e-mail message sent to many recipients at once is a  
 (a) Worm (b) Virus  
 (c) Threat (d) Spam
45. \_\_\_\_\_ is a type of memory circuitry that holds the computer's start-up routine.  
 (a) RIM (Read Initial Memory)  
 (b) RAM (Random Access Memory)  
 (c) ROM (Read Only Memory)  
 (d) Cache Memory
46. An ASCII is a character-encoding scheme that is employed by personal computers in order to represent various characters, numbers and control keys that the computer user selects on the keyboard. ASCII is an acronym for  
 (a) American Standard Code for Information Interchange  
 (b) American Standard Code for Intelligent Information  
 (c) American Standard Code for Information Integrity  
 (d) American Standard Code for Isolated Information
47. Identify the air pollutant in urban areas which irritates eyes and also the respiratory tract of human beings.  
 (a) Particulate matter (b) Oxides of nitrogen  
 (c) Surface ozone (d) Carbon monoxide
48. Which of the following is the largest source of water pollution in major rivers of India?  
 (a) Untreated sewage  
 (b) Agriculture run-off  
 (c) Unregulated small scale industries  
 (d) Religious practices
49. Sustainable development goals have specific targets to be achieved by  
 (a) 2022 (b) 2030  
 (c) 2040 (d) 2050
50. Indian government's target of producing power from biomass by the year 2022, is  
 (a) 50 MW (b) 25 MW  
 (c) 15 MW (d) 10 MW
51. **Assertion (A):** Conserving our soil resources is critical to human survival.  
**Reason (R):** Soil is home to many micro-organisms and contains minerals.
- Choose the correct code:  
 (a) Both (A) and (R) are correct and (R) is the correct explanation of (A).  
 (b) Both (A) and (R) are correct but (R) is not the correct explanation of (A).  
 (c) (A) is true and (R) is false.  
 (d) (A) is false and (R) is true.
52. World Meteorological Organisation's (WMO) objective has been to reduce the number of deaths due to hydrometeorological disasters over the decade 2010-2019 by (with reference to the decade 1994-2003)  
 (a) 25% (b) 50%  
 (c) 75% (d) 80%
53. Which of the following core values among the institutions of higher education are promoted by the NAAC (National Assessment and Accreditation Council)?  
 1. Contributing to national development.  
 2. Fostering global competencies among the students.  
 3. Inculcating a value system among students and teachers.  
 4. Promoting the optimum utilization of the infrastructure.
- Select the correct answer from the codes given below:  
**Codes:**  
 (a) 2, 3 and 4 (b) 1, 2 and 3  
 (c) 1, 3 and 4 (d) 1, 2, 3 and 4
54. The best way for providing value education is through  
 (a) discussions on scriptural texts  
 (b) lectures/discourses on values  
 (c) seminars/symposia on values  
 (d) mentoring/reflective sessions on values
55. The National Judicial Appointments Commission (NJAC) has been declared unconstitutional by  
 (a) The Supreme Court of India  
 (b) The High Court  
 (c) The High Court and the Supreme Court both  
 (d) The President of India
56. Which of the following statements about the Indian political system is/are correct?  
 1. The President is both Head of the State and Head of the Government.  
 2. Parliament is Supreme.



3. The Supreme Court is the guardian of the Constitution.
4. The Directive Principles of State Policy are justiciable.

Select the correct answer from the codes given below:

- (a) 1, 2, 3 and 4                      (b) 2, 3 and 4  
 (c) 2 and 3                              (d) 4 only

57. Which of the following are the fundamental duties?

1. To respect the National Flag.
2. To protect and improve the natural environment.
3. For a parent to provide opportunities for education to his/her child.
4. To protect monuments and places of national importance.

Select the correct answer from the codes given:

**Codes:**

- (a) 1, 2 and 3                      (b) 1, 2 and 4  
 (c) 1, 3 and 4                      (d) 1, 2, 3 and 4

58. Which of the following statements are correct in respect of Niti Aayog?

1. It is a constitutional body.
2. It is a statutory body.
3. It is neither a constitutional body nor a statutory body.
4. It is a think-tank.

Select the correct answer from the codes given below:

- (a) 1 and 4                              (b) 2 and 4  
 (c) 3 and 4                              (d) 2, 3 and 4

59. A college level assistant professor has planned his/her lectures with an intent to develop cognitive dimensions of students centered on skills of analysis and synthesis. Below, given are two sets of items Set-I consisting of levels of cognitive interchange and Set-II comprising basic requirements for promoting them. Match the two sets and indicate your answer by choosing the correct alternative from the code:

Set-I (Levels of Cognitive Interchange)	Set-II (Basic requirements for promoting cognitive interchange)
1. Memory level	(i) Giving opportunity for discriminating examples and non-examples of a point.
2. Understanding level	(ii) Recording the important points made during the presentations.
3. Reflective level	(iii) Asking the students to discuss various items of information.
	(iv) Critically analyzing the points to be made and discussed.

**Codes:**

- |     |       |      |       |
|-----|-------|------|-------|
|     | 1     | 2    | 3     |
| (a) | (ii)  | (iv) | (i)   |
| (b) | (iii) | (iv) | (ii)  |
| (c) | (ii)  | (i)  | (iv)  |
| (d) | (i)   | (ii) | (iii) |

60. Which set of learner characteristics may be considered helpful in designing effective teaching-learning systems? Select the correct alternative from the codes given below:

- (i) Prior experience of learners in respect of the subject.
- (ii) Interpersonal relationships of learner's family friends.
- (iii) Ability of the learners in respect of the subject.
- (iv) Student's language background.
- (v) Interest of students in following the prescribed dress code.
- (vi) Motivational-orientation of the students.

**Codes:**

- (a) (i), (ii), (iii) and (iv)  
 (b) (i), (iii), (iv) and (vi)  
 (c) (ii), (iii), (iv) and (v)  
 (d) (iii), (iv), (v) and (vi)

## Answer Key

Q.No.	Answer	Topic's Name	Chapter's Name
1	d	Effective teaching	Teaching aptitude
2	c	Teaching aids	Teaching aptitude
3	b	Objectives of education	Teaching aptitude
4	a	Types of test	Teaching aptitude
5	d	Method of research	Research aptitude
6	b	Steps of research	Research aptitude
7	c	Format of thesis	Research aptitude
8	c	Types of research	Research aptitude
9	c	Research ethics	Research aptitude
10	b	Types of hypothesis	Research aptitude
11	b	Fact based	Comprehension
12	c	Inferential based	Comprehension
13	d	Fact based	Comprehension
14	c	Fact based	Comprehension
15	a	Fact based	Comprehension
16	d	Inferential based	Comprehension
17	a	Types of communication	Communication
18	b	Classroom teaching	Teaching aptitude
19	a	Effective communication	Communication
20	a	Factors affecting communication	Communication
21	c	Qualities of good teacher	Teaching aptitude
22	b	Communication process	Communication
23	a	Alphabetical series	Logical reasoning
24	c	Number series	Logical reasoning
25	d	Train and speed	Mathematical reasoning
26	d	Direction	Logical reasoning
27	a	Blood relation	Logical reasoning
28	c	Alphabetical series	Logical reasoning
29	d	Syllogism	Logical reasoning
30	b	Syllogism	Logical reasoning
31	d	Types of argument	Logical reasoning
32	c	Venn diagram	Logical reasoning
33	b	Characteristics of argument	Logical reasoning
34	c	Syllogism	Logical reasoning
35	b	Data interpretation	Data interpretation
36	c	Data interpretation	Data interpretation
37	b	Data interpretation	Data interpretation
38	c	Data interpretation	Data interpretation
39	d	Data interpretation	Data interpretation
40	c	Data interpretation	Data interpretation

41	a	Terminology in ICT	Information communication & Technology
42	a	Binary numbers	Information communication & Technology
43	a	Input-output devices	Information communication & Technology
44	d	Terminology in ICT	Information communication & Technology
45	c	Input-output devices	Information communication & Technology
46	a	Terminology in ICT	Information communication & Technology
47	c	Pollution	People and environment
48	a	Pollution	People and environment
49	b	SDGs	People and environment
50	d	Energy resources	People and environment
51	b	Natural resources	People and environment
52	b	Environment protection organizations	People and environment
53	b	Evaluation of institutions	Higher education system of India
54	d	Value education	Higher education system of India
55	a	Organization in India	People and environment
56	d	Indian political system	People and environment
57	a	Fundamental duties	People and environment
58	c	Niti ayog	People and environment
59	c	Levels of learning	Teaching aptitude
60	b	Characteristics of learner	Teaching aptitude

**ANSWERS WITH EXPLANATIONS**

1. **Option (d) is correct.**  
The factors that contribute to effectiveness of teaching are knowledge of the teacher, communication skills and how effectively the teacher can manage the class.
2. **Option (c) is correct.**  
The reason behind using teaching aid will be to optimize the learning and understanding of students.
3. **Option (b) is correct.**  
Only creative and critical thinking cannot ensure jobs for students. Subject knowledge is equally important.
4. **Option (a) is correct.**  
Formative evaluation involves using quizzes and QA sessions from time to time.  
Summative evaluation is assessing the learning of students at the end of year or semester.  
Continuous and comprehensive evaluation involves regular assessments of cognitive and other learning among students. Norm and criterion reference tests are done based on a group and certain yardsticks.
5. **Option (d) is correct.**  
Ex post facto research is an attempt to understand the effect or aftermath of something which has already occurred.
6. **Option (b) is correct.**  
Identification of research question is the primary requirement for beginning any research work.
7. **Option (c) is correct.**  
The format of writing a thesis is the same as that of writing a master's or graduate dissertation.
8. **Option (c) is correct.**  
Bottom-up approach is placing together various pieces of research to get a whole. Qualitative research is conducted using this approach only.
9. **Option (c) is correct.**  
Giving proper references is a way to ethically use the work of any other researcher as a basis for further studies. Research evidence cannot be used as a basis for screening the work style of any professionals. Preliminary studies are conducted to understand the available resources better but it cannot be used for reaching any final judgement.
10. **Option (b) is correct.**  
Research hypothesis or alternative hypothesis is- "child rearing practises do influence stress-proneness"  
So, null hypothesis is- "child rearing practises do not influence stress-proneness"  
Since the Null hypothesis is rejected at 0.01 level, hence the research hypothesis will be accepted.
11. **Option (b) is correct.**  
Japan enjoyed a competitive advantage in the automobile industry for years.
12. **Option (c) is correct.**  
The labour based competitive advantage enjoyed by India and Singapore cannot be sustained over a longer period of time due to increasing number of new competitors entering in the market.
13. **Option (d) is correct.**  
Competitive advantage can be sustained over time by combining the available resources effectively in a way that is not imitable by competitors.
14. **Option (c) is correct.**  
An organization can achieve competitive advantage in any market, if it has superior knowledge that is applicable in that market.
15. **Option (a) is correct.**  
The passage highlights the financial flow prevalent in the market from the time of gold coins and later at the time of paper money.

**16. Option (d) is correct.**

In the passage, the author has emphasized on knowledge driven competitive advantage in the global market.

**17. Option (a) is correct.**

Horizontal communication is best suited in organizations where people are working at the same level.

**18. Option (b) is correct.**

Using voice modulations while talking to an audience is the best way to hold its interest for a longer period of time.

**19. Option (a) is correct.**

The barriers to effective communication will be moralization, judging the person or giving unnecessary consolation comments.

**20. Option (a) is correct.**

The partner or receiver of communication is chosen based on proximity, utility of communication and loneliness of the sender.

**21. Option (c) is correct.**

The best way for ensuring presence in the classroom will be by adopting the well-established postures.

**22. Option (b) is correct.**

Understanding the expectations of the audience and meeting those expectations is the biggest challenge that any communicator will face.

**23. Option (a) is correct.**

The alphabets are coded in reverse with the gap of one alphabet.

Y 1 A

K 1 M

C 1 E

P 1 R

G 1 I

A 1 C

Y 1 A

L 1 N

Q 1 S

**24. Option (c) is correct.**

By deducting the first number from the succeeding number, we get

$$11 - 3 = 8$$

$$23 - 11 = 12$$

$$39 - 23 = 16$$

$$59 - 39 = 20$$

Now the difference of 4 can be identified between the results *i.e.*, 8,12,16,20. Hence the next number in result series will be 24.

Now adding 24 to 59, we get 83.

**25. Option (d) is correct.**

Let ticket from A to B = X

Let ticket from A to C = Z

So,

$$2X + 3Z = 177$$

$$3X + 2Z = 173$$

By solving the equations, we get

$$5X = 165$$

$$X = 165/5 = 33$$

**26. Option (d) is correct.**

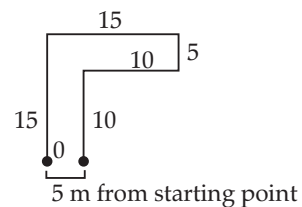
A person walks 10 m straight

Turns right and walks 10 m

Turns left and walks 5 m

Turns left and walks 15 m

Turns left and walks 15 m



By drawing this, we can find that person is at 5 m distance from starting point.

**27. Option (a) is correct.**

E is the mother of D. D is the father of C. C is the mother of B. B is the sibling of A.

Hence, A is the daughter of C and grand-daughter of D.

**28. Option (c) is correct.**

The alphabet in the series is in forward sequence and in reverse sequence alternatively. Also, the number of alphabets in each word is increasing by 1. The series will be

AB

EDC

FGHI

NMLKJ

OPQRST

**29. Option (d) is correct.**

If the proposition "Some women are not equal to men" is true, then proposition "All women are equal to men" cannot be true.

**30. Option (b) is correct.**

If proposition "All thieves are Poor" is false, then proposition "Some thieves are certainly not Poor" is certainly true.

**31. Option (d) is correct.**

In analogical reasoning, a common basis of relationship is identified between two situations.

**32. Option (c) is correct.**

Venn diagram helps in identifying whether a statement is valid or invalid.

**33. Option (b) is correct.**

An argument with false conclusion cannot be valid.

**34. Option (c) is correct.**

From given statements, we can clearly conclude that:

Ram is emotional, because Ram is religious.

Ram is not a non-religious person.

**35. Option (b) is correct.**

Expenditure for A and B in 2012 = 9 lakhs

Ratio A:B for 2012 = 2:1

Expenditure for A =  $9 \times \frac{2}{3} = 6$  lakhs

Profit of A =  $6 \times \frac{35}{100} = 210000$

Income =  $600000 + 21000 = 810000$

**36. Option (c) is correct.**

Average percentage of profit of firm B  
=  $30 + 40 + 35 + 50 + \frac{35}{5} = 38\%$

**37. Option (b) is correct.**

Profit earned by company A in 2013 = 45

Profit earned by company B in 2013 = 35

**38. Option (c) is correct.**

Total sample aged 15-20 = 33

Total sample aged 21-30 = 33

Total sample aged 31 and above = 68

Total population =  $33 + 33 + 68 = 134$

% of sample aged 21 – 30 =  $\frac{33}{134} \times 100 = 25\%$

**39. Option (d) is correct.**

Total population = 134

People who like Hip Hop =  $9 + 3 + 4 = 16$

% People who like Hip Hop =  $\frac{16}{134} \times 100 = 12\%$

**40. Option (c) is correct.**

Total sample aged 31 and above = 68

Total sample other than classical 31 and above  
=  $68 - 17 = 51$

% Age of sample other than classical 31 and above  
=  $\frac{51}{68} \times 100 = 75\%$

**41. Option (a) is correct.**

Information technology refers to using computer software and hardware to manage the electronic data.

**42. Option (a) is correct.**

By using division method, we can convert a decimal number to binary number. We need to divide number by 2 and write the remainder aside.

We divide  $51/2 = 25$  and remainder is 1

$25/2 = 12$  and remainder is 1

$12/2 = 6$  and remainder is 0

$6/2 = 3$  and remainder is 0

$3/2 = 1$  and remainder is 1

Last answer is 1.

		even = 0		
		odd = 1		
2	48 → 0	2	51 → 1	
2	24 → 0	2	25 → 1	
2	12 → 0	2	12 → 0	
2	6 → 0	2	6 → 0	
2	3 → 1	2	3 → 1	
	1 → 1		1 → 1	
110000		51 = 110011		

We write the last answer and all the remainder digits in backwards for getting binary digit.

Hence, answer is 110011

**43. Option (a) is correct.**

The process of copying data in a CD Rom through a computer system is known as Burning.

**44. Option (d) is correct.**

SPAM is an unnecessary message sent to a large bunch of email ids for marketing purposes or with the aim of phishing.

**45. Option (c) is correct.**

ROM or Read Only Memory holds and manages the start up routine of any computer system.

**46. Option (a) is correct.**

The full form of ASCII is the American Standard Code for Information Interchange.

**47. Option (c) is correct.**

Surface ozone is formed by the chemical reaction of emission from cars, industries, etc in sunlight near the surface of earth. It causes problems in eyes and respiratory tracts.

**48. Option (a) is correct.**

The largest source of pollution in rivers of India is untreated sewage released in them.

**49. Option (b) is correct.**

The sustainable development goals were set in 2015 by the General Assembly of the UN, to be achieved by 2030. These are goals to attain a sustainable future for everyone.

50. **Option (d) is correct.**  
The government of India has planned to produce 175 GW power from renewable energy by 2022. This includes production of 10 GW power from biomass.
51. **Option (b) is correct.**  
Both the given statements are correct but they are not related. Conserving Soil helps in preserving water resources and prevent climate changes as well as natural disasters.
52. **Option (b) is correct.**  
WMO's aim was to reduce the deaths to half over the decade of 2010-2019.
53. **Option (b) is correct.**  
The Aim of NACC does not include promotion of optimum utilization of infrastructure.
54. **Option (d) is correct.**  
Value education can be best promoted in students by providing effective mentorship and good reflective sessions.
55. **Option (a) is correct.**  
The supreme court of India has declared the National Judicial Appointment commission as unconstitutional.
56. **Option (d) is correct.**  
Only one statement is correct – The Supreme Court is the guardian of the constitution.
57. **Option (a) is correct.**  
To protect national monuments and places of national importance is not a fundamental duty.
58. **Option (c) is correct.**  
NITI Aayog is a think tank of the Government of India and is not a constitutional or statutory body. It assists the Government of India in economic policy related decisions.
59. **Option (c) is correct.**  
For developing memory dimension, teacher should promote habits of taking notes.  
For developing an understanding dimension, teacher should give the opportunity to differentiate between examples and non-examples.  
For developing a reflective dimension, teacher should promote critical analysis discussions of topics being discussed in lectures.
60. **Option (b) is correct.**  
For ensuring effective teaching learning process the characteristics of learners which are helpful are-  
Prior experience of learners, ability of learners, language ability of learners and motivation to learn among students.

# UGC NET PAPER-1

## GENERAL APTITUDE

# Solved Paper December 2015

Time Allotted: 1 Hour

Maximum Marks: 100

### Important Instructions:

1. Each question carries 2 marks.
2. There are 50 questions to be attempted out of 60 questions.
3. Each item has four alternative responses marked (a), (b), (c) and (d). You have to darken the oval as indicated below on the correct response against each item.  
**Example:** where (c) is the correct response.
4. Your responses to the items are to be indicated in the **Answer Sheet**.
5. **Use of any calculator or log table etc., is prohibited.**
6. **Negative Marking: For each incorrect answer 0.5 marks shall be deducted.**

1. Greater the handicap of the students coming to the educational institutions, greater the demand on the:  
(a) Family                      (b) Society  
(c) Teacher                      (d) State
2. What are the characteristics of Continuous and Comprehensive Evaluation?
  1. It increases the workload on students by taking multiple tests.
  2. It replaces marks with grades.
  3. It evaluates every aspect of the student.
  4. It helps in reducing examination phobia.Select the correct answer from the codes given below:  
(a) 1, 2, 3 and 4                      (b) 2 and 4  
(c) 1, 2 and 3                      (d) 2, 3 and 4
3. Which of the following attributes denote great strengths of a teacher?
  1. Full-time active involvement in the institutional management
  2. Setting examples
  3. Willingness to put assumptions to the test
  4. Acknowledging mistakesSelect the correct answer from the codes given below:  
(a) 1, 2 and 4                      (b) 2, 3 and 4  
(c) 1, 3 and 4                      (d) 1, 2, 3 and 4
4. Which one of the following statements is correct in the context of multiple-choice type questions?  
(a) They are more objective than true-false type questions.  
(b) They are less objective than essay type questions.  
(c) They are more subjective than short-answer type questions.  
(d) They are more subjective than true-false type questions.
5. As Chairman of an independent commission on education, Jacques Delors report to UNESCO was titled:  
(a) International Commission on Education Report  
(b) Millennium Development Report  
(c) Learning: The Treasure Within  
(d) World Declaration on Education for All
6. What are required for good teaching?
  1. Diagnosis
  2. Remedy
  3. Direction
  4. FeedbackSelect the correct answer from the codes given below:  
(a) 1, 2, 3 and 4                      (b) 1 and 2  
(c) 2, 3 and 4                      (d) 3 and 4
7. Which of the following statements is not true in the context of participatory research?  
(a) It recognizes knowledge as power.  
(b) It emphasises on people as experts.  
(c) It is a collective process of enquiry.  
(d) Its sole purpose is production of knowledge.
8. Which of the following statements is true in the context of the testing of a hypothesis?



- (a) It is only the alternative hypothesis, that can be tested.
- (b) It is only the null hypothesis, that can be tested.
- (c) Both, the alternative and the null hypotheses can be tested.
- (d) Both, the alternative and the null hypotheses cannot be tested.
9. Which of the following are the basic rules of APA style of referencing format?
1. Italicize titles of shorter works such as journal articles or essays
  2. Invert authors' names (last name first)
  3. Italicize titles of longer works such as books and journals
  4. Alphabetically index reference list
- Select the correct answer from the codes given below:
- (a) 1 and 2                      (b) 2, 3 and 4  
(c) 3 and 4                      (d) 1, 2, 3 and 4
10. Which of the following are the characteristics of a seminar?
1. It is a form of academic instruction.
  2. It involves questioning, discussion and debates.
  3. It involves large groups of individuals.
  4. It needs involvement of skilled persons.
- Select the correct answer from the codes given below:
- (a) 2 and 3                      (b) 2 and 4  
(c) 2, 3 and 4                  (d) 1, 2 and 4
11. A researcher is interested in studying the prospects of a particular political party in an urban area. What tool should he prefer for the study?
- (a) Rating scale                (b) Interview  
(c) Questionnaire              (d) Schedule
12. Ethical norms in research do not involve guidelines for:
- (a) Thesis format  
(b) Copyright  
(c) Patenting policy  
(d) Data sharing policies

**Direction for question 13 to 17:**

Read the following passage carefully and answer the questions.

I did that thing recently where you have to sign a big card - which is a horror unto itself, especially as the keeper of the Big Card was leaning over me at the time. Suddenly I was

on the spot, a rabbit in the headlights, torn between doing a fun message or some sort of in-joke or a drawing. Instead overwhelmed by the myriad options available to me, I decided to just write: "Good luck, best, Joel".

It was then that I realised, to my horror, that I had forgotten how to write. My entire existence is "tap letters into computer". My shopping lists are hidden in the notes function of my phone. If I need to remember something I send an e-mail to myself. A pen is something I chew when I'm struggling to think. Paper is something I pile beneath my laptop to make it a more comfortable height for me to type on.

A poll of 1,000 teens by the stationers, Bic found that one in 10 don't own a pen, a third have never written a letter, and half of 13 to 19 years - old have never been forced to sit down and write a thank you letter. More than 80% have never written a love letter, 56% don't have letter paper at home. And a quarter have never known the unique torture of writing a birthday card. The most a teen ever has to use a pen is on an exam paper.

Bic, have you heard of mobile phones? Have you heard of e-mail, facebook and snap chatting? This is the future. Pens are dead. Paper is dead. Handwriting is a relic.

"Handwriting is one of the most creative outlets we have and should be given the same importance as other art forms such as sketching, painting or photography."

Answer the following questions:

13. When confronted with signing a big card, the author felt like "a rabbit in the headlight". What does this phrase mean?
- (a) A state of confusion  
(b) A state of pleasure  
(c) A state of anxiety  
(d) A state of pain
14. According to the author, which one is not the most creative outlet of pursuit?
- (a) Handwriting                (b) Photography  
(c) Sketching                  (d) Reading
15. The entire existence of the author revolves round:
1. Computer
  2. Mobile phone
  3. Typewriter

- Identify the correct answer from the codes given below:
- (a) 2 only                      (b) 1 and 2 only  
(c) 1, 2 and 3                (d) 2 and 3 only
16. How many teens, as per the Bic survey, do not own a pen?  
(a) 800                          (b) 560  
(c) 500                          (d) 100
17. What is the main concern of the author?  
(a) That the teens use social networks for communication.  
(b) That the teens use mobile phones.  
(c) That the teens use computer.  
(d) That the teens have forgotten the art of handwriting.
18. The main objectives of student evaluation of teachers are:
- To gather information about student weaknesses.
  - To make teachers take teaching seriously.
  - To help teachers adopt innovative methods of teaching.
  - To identify the areas of further improvement in teacher traits. Identify the correct answer from the codes given below:  
(a) 1 and 2 only                (b) 2, 3 and 4  
(c) 1, 2 and 3                (d) 1 only
19. Using the central point of the classroom communication as the beginning of a dynamic pattern of ideas is referred to as:  
(a) Systemisation  
(b) Problem - orientation  
(c) Idea protocol  
(d) Mind mapping
20. Aspects of the voice, other than the speech are known as:  
(a) Physical language    (b) Personal language  
(c) Para language        (d) Delivery language
21. Every type of communication is affected by its:  
(a) Reception                (b) Transmission  
(c) Non-regulation        (d) Context
22. Attitudes, actions and appearances in the context of classroom communication are considered as:  
(a) Verbal                      (b) Non-verbal  
(c) Impersonal                (d) Irrational
23. Most often, the teacher - student communication is:  
(a) Spurious                    (b) Critical  
(c) Utilitarian                (d) Confrontational
24. In a classroom, a communicator's trust level is determined by:  
(a) the use of hyperbole  
(b) the change of voice level  
(c) the use of abstract concepts  
(d) eye contact
25. The next term in the series 2, 5, 10, 17, 26, 37 ? is:  
(a) 50                              (b) 57  
(c) 62                              (d) 72
26. A group of 210 students appeared in some test. The mean of 1/3rd of students is found to be 60. The mean of the remaining students is found to be 78. The mean of the whole group will be:  
(a) 80                              (b) 76  
(c) 74                              (d) 72
27. Anil after travelling 6 km towards East from his house realized that he has travelled in a wrong direction. He turned and travelled 12 km towards West, turned right and travelled 8 km to reach his office. The straight distance of the office from his house is:  
(a) 20 km                        (b) 14 km  
(c) 12 km                        (d) 10 km
28. The next term in the series: B2E, D5H, F12K, H27N ? is:  
(a) J56I                            (b) I62Q  
(c) Q62J                        (d) J58Q
29. A party was held in which a grandmother, father, mother, four sons, their wives and one son and two daughters to each of the sons were present. The number of females present in the party is:  
(a) 12                              (b) 14  
(c) 18                              (d) 24
30. P and Q are brothers. R and S are sisters. The son of P is brother of S. Q is related to R as:  
(a) Son                            (b) Brother  
(c) Uncle                        (d) Father
31. Consider the argument given below:  
'Pre-employment testing of teachers is quite fair because doctors, architects and engineers who are now employed had to face such a testing.'  
What type of argument it is?

- (a) Deductive                      (b) Analogical  
(c) Psychological                (d) Biological

32. Among the following propositions two are related in such a way that they can both be true although they cannot both be false. Which are those propositions? Select the correct code.

**Propositions:**

1. Some priests are cunning.
2. No priest is cunning.
3. All priests are cunning.
4. Some priests are not cunning.

**Codes:**

- (a) 1 and 2                      (b) 3 and 4  
(c) 1 and 3                      (d) 1 and 4

33. A Cluster of propositions with a structure that exhibits some inference is called:

- (a) An inference                (b) An argument  
(c) An explanation            (d) A valid argument

34. Consider the following assertion (A) and reason (R) and select the correct code given below:

**Assertion (A):** No man is perfect.

**Reason (R):** Some men are not perfect.

- (a) Both (A) and (R) are true but (R) does not provide sufficient reason for (A).  
(b) Both (A) and (R) are true and (R) provides sufficient reason for (A).  
(c) (A) is true but (R) is false.  
(d) (A) is false but (R) is true.

35. A definition that has a meaning that is deliberately assigned to some symbol is called:

- (a) Lexical                      (b) Precising  
(c) Stipulative                (d) Persuasive

36. If the proposition 'No men are honest' is taken to be false which of the following proposition/propositions can be claimed certainly to be true?

**Propositions:**

- (a) All men are honest  
(b) Some men are honest  
(c) Some men are not honest  
(d) No honest person is man

**Direction for questions 37 to 42:**

Given below in the table is the decadal data of Population and Electrical Power Production of a country.

Year	Population (million)	Electrical Power Production (GW)*
1951	20	10
1961	21	20

1971	24	25
1981	27	40
1991	30	50
2001	32	80
2011	35	100

\*1 GW = 1000 million watt

37. Which decade registered the maximum growth rate (%) of population?

- (a) 1961-1971                      (b) 1971-1981  
(c) 1991-2001                      (d) 2001-2011

38. Average decadal growth rate (%) of population is:

- (a) ~12.21%                      (b) ~9.82%  
(c) ~6.73%                      (d) ~5%

39. Based on the average decadal growth rate, what will be the population in the year 2021?

- (a) 40.34 million                (b) 38.49 million  
(c) 37.28 million                (d) 36.62 million

40. In the year 1951, what was the power availability per person?

- (a) 100 W                      (b) 200 W  
(c) 400 W                      (d) 500 W

41. In which decade, the average power availability per person was maximum?

- (a) 1981-1991                      (b) 1991-2001  
(c) 2001-2011                      (d) 1971-1981

42. By what percentage (%) the power production increased from 1951 to 2011?

- (a) 100%                      (b) 300%  
(c) 600%                      (d) 900%

43. NMEICT stands for:

- (a) National Mission on Education through ICT  
(b) National Mission on E-governance through ICT  
(c) National Mission on E-commerce through ICT  
(d) National Mission on E-learning through ICT

44. Which of the following is an instant messaging application?

1. WhatsApp
2. Google Talk
3. Viber

Select the correct answer from the codes given below:

- (a) 1 and 2 only                      (b) 2 and 3 only  
(c) 1 only                                (d) 1, 2 and 3
45. In a Computer a byte generally consists of:  
(a) 4 bits                                (b) 8 bits  
(c) 16 bits                                (d) 10 bits
46. Which of the following is not an input device?  
(a) Microphone                      (b) Keyboard  
(c) Joystick                              (d) Monitor
47. Which of the following is an open source software?  
(a) MS Word                            (b) Windows  
(c) Mozilla Firefox                    (d) Acrobat Reader
48. Which of the following enables us to send the same letter to different persons in MS Word?  
(a) Mail join                            (b) Mail copy  
(c) Mail insert                          (d) Mail merge
49. Inside rural homes, the source/sources of Nitrogen Oxide Pollution may be:  
1. Unvented gas stoves  
2. Wood stoves  
3. Kerosene heaters  
Choose the correct code:  
(a) 1 and 2 only                      (b) 2 and 3 only  
(c) 2 only                                (d) 1, 2 and 3
50. Which of the following pollutants can cause cancer in humans?  
(a) Pesticides                          (b) Mercury  
(c) Lead                                  (d) Ozone
51. **Assertion (A):** People population control measures do not necessarily help in checking environmental degradation.  
**Reason (R):** The relationship between population growth and environmental degradation is rather complex.  
Choose the correct answer from the following:  
(a) Both (A) and (R) are true and (R) is the correct explanation of (A).  
(b) Both (A) and (R) are true but (R) is not the correct explanation of (A).  
(c) (A) is true but (R) is false.  
(d) (A) is false but (R) is true.
52. Which of the following phenomena is not a natural hazard?  
(a) Wildfire  
(b) Lightning  
(c) Landslide  
(d) Chemical contamination
53. As part of National Climate Change Policy, Indian government is planning to raise the installed capacity of renewable energy by the year 2030 to:  
(a) 175 GW                                (b) 200 GW  
(c) 250 GW                                (d) 350 GW
54. At present, in terms of per capita energy consumption (kWh/year), identify the correct sequence.  
(a) Brazil > Russia > China > India  
(b) Russia > China > India > Brazil  
(c) Russia > China > Brazil > India  
(d) China > Russia > Brazil > India
55. Which of the following are the objectives of Rashtriya Uchchatar Shiksha Abhiyan (RUSA)?  
1. To improve the overall quality of state institutions.  
2. To ensure adequate availability of quality faculty.  
3. To create new institutions through upgradation of existing autonomous colleges.  
4. To downgrade universities with poor infrastructure into autonomous colleges.  
Select the correct answer from the codes given below:  
(a) 1, 2, 3 and 4                      (b) 1, 2 and 3  
(c) 1, 3 and 4                          (d) 1, 2 and 3
56. The grounds on which discrimination in admission to educational institutions is constitutionally prohibited are:  
1. Religion  
2. Sex  
3. Place of birth  
4. Nationality  
Select the correct answer from the codes given below:  
(a) 2, 3 and 4                            (b) 1, 2 and 3  
(c) 1, 2 and 4                            (d) 1, 2, 3 and 4
57. Which of the following statements are correct about Lok Sabha?  
1. The Constitution puts a limit on the size of the Lok Sabha.  
2. The size and shape of the Parliamentary Constituencies is determined by the Election Commission.

3. First - past - the Post electoral system is followed.
4. The Speaker of Lok Sabha does not have a casting vote in case of an equality of votes.  
Select the correct answer from the codes given below:
- (a) 1 and 3 only            (b) 1, 2 and 3  
(c) 1, 3 and 4            (d) 1, 2, 3 and 4
58. Public Order as an item in the Constitution figures in:
- (a) the Union List  
(b) the State List  
(c) the Concurrent List  
(d) the Residuary Powers
59. The term of office of the Advocate General of a State is:
- (a) 4 years                    (b) 5 years  
(c) 6 years or 65 years of age whichever is earlier  
(d) not fixed
60. Which among the following States has the highest number of seats in the Lok Sabha?
- (a) Maharashtra            (b) Rajasthan  
(c) Tamil Nadu              (d) West Bengal
-

## Answer Key

Q.No.	Answer	Topic's Name	Chapter's Name
1	c	General aptitude	Teaching aptitude
2	d	Continuous and comprehensive evaluation	Teaching aptitude
3	b	Qualities of a good teacher	Teaching aptitude
4	a	Types of questions	Teaching aptitude
5	c	Committees on higher education	Higher education system
6	a	Teaching methods	Teaching aptitude
7	d	Types of research	Research aptitude
8	b	Hypothesis testing	Research aptitude
9	b	Thesis writing styles	Research aptitude
10	d	Terminology in research	Research aptitude
11	c	Research tools	Research aptitude
12	a	Research ethics	Research aptitude
13	a	Inference Based	Comprehension
14	d	Inference Based	Comprehension
15	b	Fact based	Comprehension
16	d	Fact based	Comprehension
17	d	Fact based	Comprehension
18	b	Evaluation	Teaching aptitude
19	d	Classroom communication	Communication
20	c	Terminology	Communication
21	d	Types of communication	Communication
22	b	Classroom communication	Communication
23	c	Types of communication	Communication
24	d	Classroom communication	Communication
25	a	Number series	Logical reasoning
26	d	Ratio and proportion	Mathematical reasoning
27	d	Direction	Logical reasoning
28	d	Alphabetical series	Logical reasoning
29	b	Blood relation	Logical reasoning
30	c	Blood relation	Logical reasoning
31	b	Argument and conclusion	Logical reasoning
32	d	Syllogism	Logical reasoning
33	b	Terminology in logical reasoning	Logical reasoning
34	a	Syllogism	Logical reasoning
35	c	Types of definition	Logical reasoning
36	b	Syllogism	Logical reasoning
37	a	Data interpretation	Data interpretation
38	b	Data interpretation	Data interpretation
39	b	Data interpretation	Data interpretation

40	d	Data interpretation	Data interpretation
41	c	Data interpretation	Data interpretation
42	d	Data interpretation	Data interpretation
43	a	Government initiatives	Higher education system
44	d	Software	Information communication & technology
45	b	Memory units	Information communication & technology
46	d	Input-output devices	Information communication & technology
47	c	Software	Information communication & technology
48	d	Terminology in ICT	Information communication & technology
49	d	Pollutants	People and environment
50	a	Pollutants	People and environment
51	a	Environmental pollution	People and environment
52	d	Natural disasters	People and environment
53	d	National climate change policy	People and environment
54	c	Natural energy resources	People and environment
55	b	Government initiatives	Higher education system
56	b	Barriers for higher education	Higher education system
57	a	Parliament	People and environment
58	b	Terms related to Constitution	People and environment
59	d	Constitution	People and environment
60	a	Parliament	People and environment

**ANSWERS WITH EXPLANATIONS**

1. **Option (c) is correct.**  
It is the responsibility of the teacher to ensure that every student in the class is at the same level of understanding.
2. **Option (d) is correct.**  
Continuous and comprehensive evaluation does not increase workload on students.
3. **Option (b) is correct.**  
Active involvement in the management of institution is a discretionary choice of any teacher. It does not affect the teaching skills of any teacher.
4. **Option (a) is correct.**  
MCQs require respondents to be more specific and hence it helps in better judgement of the understanding level of learners.
5. **Option (c) is correct.**  
Delors report is a report providing an insight into four pillars of learning and education throughout life which was submitted by Delors commission. It was titled "Learning: the treasure within".
6. **Option (a) is correct.**  
Effective teaching requires all diagnosis, remedy, direction and feedback.
7. **Option (d) is correct.**  
The purpose of participatory research is to involve the opinions of all those people who are impacted by the subject under study.
8. **Option (b) is correct.**  
Alternative hypothesis is accepted or rejected based on the result of null hypothesis.
9. **Option (b) is correct.**  
Italicizing the name of shorter works is not the rule under APA style of referencing.
10. **Option (d) is correct.**  
Involving large group of people is not a necessary characteristic of Seminars.
11. **Option (c) is correct.**  
Questionnaire method is the best for conducting a survey with the aim of understanding the prospects of any political party.
12. **Option (a) is correct.**  
There is no strict format for drafting thesis. The format is normally decided by the institutes and the heads.
13. **Option (a) is correct.**  
While writing a birthday card using pen and paper, author felt the state of confusion as writing using laptops and iPhone is much easier.
14. **Option (d) is correct.**  
Author has not listed reading as one of the creative pursuit.
15. **Option (b) is correct.**  
Author has always used mobiles and computers for writing and other related activities.
16. **Option (d) is correct.**  
As per Bic survey of 1000 teens, one in every 10 teenagers do not own a pen. That makes it 100 teenagers out of 1000, who do not own a pen.
17. **Option (d) is correct.**  
The main issue covered in the passage is that people have forgotten the art of writing.
18. **Option (b) is correct.**  
The aim of taking student's feedback is not to identify the weakness of students.
19. **Option (d) is correct.**  
Mind mapping is an effective tool used for brainstorming on any important idea which needs to be discussed further.
20. **Option (c) is correct.**  
Paralanguage in communication involves those aspects of speech which support the way in which message is received by the audience. These are gestures, facial expressions, voice modulations, pitch and speech, etc.



- 21. Option (d) is correct.**  
Context in communication is the situation or background in which message is being transferred. Context has a huge role to play in effective communication.
- 22. Option (b) is correct.**  
Attitude, actions and appearances of sender and receivers are nonverbal communication.
- 23. Option (c) is correct.**  
The communication between teacher and student has a specific and predefined purpose and motive behind it.
- 24. Option (d) is correct.**  
Eye contact determines the trust level between the communicator and the audience.
- 25. Option (a) is correct.**  
The difference between two terms in the given series is a sequence of prime numbers. 3,5,7,9,11 is the difference in the given series. Hence next number will be 50 by adding 13.
- 26. Option (d) is correct.**  
If the mean of all 210 students is A,  
 $A = (1/3 \times 210 - 60) + (2/3 \times 210 - 78)$   
 $A = 72$
- 27. Option (d) is correct.**  
By plotting the directions on graph, we get a right-angle triangle ABC. Considering AC is the slope and by Applying Pythagoras theorem,  
 $AC = \text{Sq. root of } (AB)^2 + (BC)^2$   
 $AC = \text{Sq. root of } 64 + 36$   
 $AC = 10$
- 28. Option (d) is correct.**  
In the given series,  
 1. First alphabets of all terms are increasing by adding 2 alphabets in each term *i.e.*,  
 $B + 2 = D, D + 2 = F, F + 2 = H, H + 2 = J.$   
 2. Numbers in the middle are increasing by multiplication of 2 and then adding one to it *i.e.*,  $(*2+1)$ . Then  $(*2 + 2)$   $(*2 + 3)$  and so on.  
 3. Third alphabets of all terms are increasing by adding 3 alphabets in each term *i.e.*,  
 $E + 3 = H, H + 3 = K, K + 3 = N, N + 3 = Q$   
 Hence next term is J58Q.
- 29. Option (b) is correct.**  
Total number of females = 1 mother + 4 wives + 1 grandmother + eight daughters.  
Total number of females = 14
- 30. Option (c) is correct.**  
Since the son of P is the brother of S, hence P is the father of R and S.  
P and Q are brothers.  
So, Q is the uncle of R.
- 31. Option (b) is correct.**  
Analogical arguments are the statements which compare one situation to a similar situation considering that if one statement is true then other must also be true.
- 32. Option (d) is correct.**  
Some priests are cunning  
Some priests are not cunning  
These two statements can both be true together but cannot be false together.
- 33. Option (b) is correct.**  
An argument is a bunch of statements with a valid conclusion drawn based on those arguments.
- 34. Option (a) is correct.**  
Both of the given statements are true but statement R does not explain A clearly.
- 35. Option (c) is correct.**  
Stipulative definitions are designed to give a new meaning to any new or already existing term.
- 36. Option (b) is correct.**  
If proposition "No men are honest" is false, then we can say that "some men are honest" with surety.
- 37. Option (a) is correct.**  
Growth rate in 1951-61 =  $(21 - 20)/20 \times 100 = 5\%$   
 Growth rate in 1961-71 =  $(24 - 21)/21 \times 100 = 14.28\%$   
 Growth rate in 1971-81 =  $(27 - 24)/21 \times 100 = 12.5\%$   
 Growth rate in 1981-91 =  $(30 - 27)/27 \times 100 = 11.11\%$

$$\begin{aligned} \text{Growth rate in 1991–2001} &= (32 - 30)/30 \times 100 \\ &= 6.66\% \end{aligned}$$

$$\begin{aligned} \text{Growth rate in 2001–2011} &= (35 - 32)/30 \times 100 \\ &= 9.37\% \end{aligned}$$

38. **Option (b) is correct.**

$$\begin{aligned} \text{Average decadal growth rate of population} &= \\ (5 + 14.28 + 12.5 + 11.11 + 6.66 + 9.37)/6 &= \\ 9.82\% \end{aligned}$$

39. **Option (b) is correct.**

$$\begin{aligned} \text{Average decadal growth rate of population} &= \\ 9.82\% \end{aligned}$$

$$\begin{aligned} \text{Population in 2021} &= (35 \times 9.82/100) + 35 \\ &= 38.49 \end{aligned}$$

40. **Option (d) is correct.**

$$1 \text{ GW} = 1000 \text{ million watts}$$

$$10 \text{ GW} = 10000 \text{ million watts}$$

$$\begin{aligned} \text{Power availability per person in 1951} &= 10000/20 \\ &= 500 \text{ W} \end{aligned}$$

41. **Option (c) is correct.**

$$\begin{aligned} \text{Power availability per person in 1951} &= 10000/20 \\ &= 500 \text{ W} \end{aligned}$$

$$\begin{aligned} \text{Power availability per person in 1961} &= 20000/21 \\ &= 952 \text{ W} \end{aligned}$$

$$\begin{aligned} \text{Power availability per person in 1971} &= 25000/24 \\ &= 1041 \text{ W} \end{aligned}$$

$$\begin{aligned} \text{Power availability per person in 1981} &= 40000/27 \\ &= 1481 \text{ W} \end{aligned}$$

$$\begin{aligned} \text{Power availability per person in 1991} &= 50000/30 \\ &= 1666 \text{ W} \end{aligned}$$

$$\begin{aligned} \text{Power availability per person in 2001} &= 80000/32 \\ &= 2500 \text{ W} \end{aligned}$$

$$\begin{aligned} \text{Power availability per person in 2011} &= \\ 100000/35 &= 2857 \text{ W} \end{aligned}$$

42. **Option (d) is correct.**

$$\text{Power production in 1951} = 10000 \text{ W}$$

$$\text{Power production in 2011} = 100000 \text{ W}$$

$$\begin{aligned} \text{Increase in power production from 1951 to 2011} &= \\ 90000 \end{aligned}$$

$$\% \text{ increase} = 90000/10000 \times 100 = 900\%$$

43. **Option (a) is correct.**

The full form of NMEICT national mission on education through ICT.

44. **Option (d) is correct.**

WhatsApp, Google talk and Viber are all instant messaging application.

45. **Option (b) is correct.**

1 byte equals to 8 bits.

46. **Option (d) is correct.**

Monitor of any computer system is an output device.

47. **Option (c) is correct.**

Mozilla Firefox is an open-source software or web browser which is very user friendly and provide access to global information easily.

48. **Option (d) is correct.**

Mail merge is a feature in Ms word, using which a list of recipients can be provided along with different messages for each recipient. Each recipient will receive a mail specifically drafted for them.

49. **Option (d) is correct.**

Gas stoves, wood stoves and kerosene heaters, all are the source of nitrogen oxide in rural homes.

50. **Option (a) is correct.**

Organophosphate and organochlorine classes of pesticides were the most to be associated with cancer.

51. **Option (a) is correct.**

Controlling the population growth is necessary but it will not necessarily help in managing environmental degradation. There are other factors also leading to environmental issues.

52. **Option (d) is correct.**

Chemical contamination of rivers and other natural resources is not a natural hazard, rather humans are responsible for it.

53. **Option (d) is correct.**

By 2030, Indian government has aimed to increase the energy production from renewable sources to 350 GW.

54. **Option (c) is correct.**

Per capita energy consumption of Russia is 6917 kWh approx.

Per capita energy consumption of China is 4906 kWh approx.

Per capita energy consumption of Brazil is 2671 kWh approx.

Per capita energy consumption of India is 1181 kWh approx.

**55. Option (b) is correct.**

To downgrade the universities with poor infrastructure into autonomous colleges, is not the objective of RUSA. RUSA is an scheme initiated in 2013 by MHRD with the aim of development of higher education in India.

**56. Option (b) is correct.**

Discrimination in admission to educational institutions is constitutionally prohibited on the basis of religion, gender and place of birth.

**57. Option (a) is correct.**

First past the post system means that the parties securing the highest number of votes will become eligible for the district seats. The party which loses the election will not get any representation. Also size of Lok Sabha is determined by constitution.

**58. Option (b) is correct.**

Public order as an item falls in state list in constitution. It covers the police and criminal justice issues.

**59. Option (d) is correct.**

Advocate general of the state advises the state government on legal issues. The term of advocate general of state is not fixed.

**60. Option (a) is correct.**

Maharashtra has 48 seats in Lok Sabha.

Rajasthan has 25 seats in Lok Sabha.

Tamil Nadu has 39 seats in Lok Sabha.

West Bengal has 42 seats in Lok Sabha.



# UGC NET PAPER-1

# GENERAL APTITUDE

# Solved Paper June 2015

Time Allotted: 1 Hour

Maximum Marks: 100

## Important Instructions:

1. Each question carries 2 marks.
2. There are 50 questions to be attempted out of 60 questions.
3. Each item has four alternative responses marked (a), (b), (c) and (d). You have to darken the oval as indicated below on the correct response against each item.  
**Example:** where (c) is the correct response.
4. Your responses to the items are to be indicated in the **Answer Sheet**.
5. **Use of any calculator or log table etc., is prohibited.**
6. **Negative Marking: For each incorrect answer 0.5 marks shall be deducted.**

1. Which of the following is the highest level of cognitive ability?  
(a) Knowing                      (b) Understanding  
(c) Analysing                      (d) Evaluating
2. Which of the following factors does not impact teaching?  
(a) Teacher's knowledge  
(b) Class room activities that encourage learning  
(c) Socio-economic background of teachers and students  
(d) Learning through experience
3. Which of the following statements about teaching aids are correct?
  1. They help in retaining concepts for longer duration.
  2. They help students learn better.
  3. They make teaching learning process interesting.
  4. They enhance rote learning.Select the correct answer from the codes given below:  
(a) 1, 2, 3 and 4                      (b) 1, 2 and 3  
(c) 2, 3 and 4                      (d) 1, 2 and 4
4. Techniques used by a teacher to teach include:
  1. Lecture
  2. Interactive lecture
  3. Group work
  4. Self studySelect the correct answer from the codes given below:  
(a) 1, 2 and 3                      (b) 1, 2, 3 and 4  
(c) 2, 3 and 4                      (d) 1, 2 and 4
5. Achievement tests are commonly used for the purpose of:  
(a) Making selections for a specific job  
(b) Selecting candidates for a course  
(c) Identifying strengths and weaknesses of learners  
(d) Assessing the amount of learning after teaching
6. A good teacher is one who:  
(a) gives useful information  
(b) explains concepts and principles  
(c) gives printed notes to students  
(d) inspires students to learn
7. Which of the following statements regarding the meaning of research are correct?  
(a) Research refers to a series of systematic activity or activities undertaken to find out the solution of a problem.  
(b) It is a systematic, logical and an unbiased process wherein verification of hypothesis, data analysis, interpretation and formation of principles can be done.  
(c) It is an intellectual enquiry or quest towards truth.  
(d) It leads to enhancement of knowledge.  
Select the correct answer from the codes given below:  
(a) 1, 2 and 3                      (b) 2, 3 and 4  
(c) 1, 3 and 4                      (d) 1, 2, 3 and 4
8. A good thesis writing should involve:
  1. reduction of punctuation and grammatical errors to a minimum.

2. careful checking of references.
3. consistency in the way the thesis is written.
4. a clear and well written abstract.

Select the correct answer from the codes given below:

- (a) 1, 2, 3 and 4                      (b) 1, 2 and 3  
(c) 1, 2 and 4                        (d) 2, 3 and 4
9. Jean Piaget gave a theory of cognitive development of humans on the basis of his:
    - (a) Fundamental Research
    - (b) Applied Research
    - (c) Action Research
    - (d) Evaluation Research
  10. "Male and female students perform equally well in a numerical aptitude test." This statement indicates a:
    - (a) research hypothesis
    - (b) null hypothesis
    - (c) directional hypothesis
    - (d) statistical hypothesis
  11. The conclusions/findings of which type of research cannot be generalized to other situations?
    - (a) Historical Research
    - (b) Descriptive Research
    - (c) Experimental Research
    - (d) Causal Comparative Research
  12. Which of the following steps are required to design a questionnaire?
    1. Writing primary and secondary aims of the study.
    2. Review of the current literature.
    3. Prepare a draft of questionnaire.
    4. Revision of the draft.

Select the correct answer from the codes given below:

- (a) 1, 2 and 3                      (b) 1, 3 and 4  
(c) 2, 3 and 4                        (d) 1, 2, 3 and 4

**Direction for questions 13 to 18:**

Read the following passage carefully and answer the questions.

Story telling is not in our genes. Neither it is an evolutionary history. It is the essence of what makes us Human,

Human beings progress by telling stories. One event can result in a great variety of stories being told about it. Sometimes those stories differ greatly. Which stories are picked up and repeated and which ones are dropped and

forgotten often determines how we progress. Our history, knowledge and understanding are all the collections of the few stories that survive. This includes the stories that we tell each other about the future. And how the future will turn out depends partly, possibly largely, on which stories we collectively choose to believe.

Some stories are designed to spread fear and concern. This is because some story-tellers feel that there is a need to raise some tensions. Some stories are frightening, they are like totemic warnings: "Fail to act now and we are all doomed." Then there are stories that indicate that all will be fine so long as we leave everything upto a few especially able adults. Currently, this trend is being led by those who call themselves "rational optimists". They tend to claim that it is human nature to compete and to succeed and also to profit at the expense of others. The rational optimists however, do not realize how humanity has progressed overtime through amiable social networks and how large groups work in less selfishness and in the process accommodate rich and poor, high and low alike. This aspect in story-telling is considered by the 'Practical Possibles', who sit between those who say all is fine and cheerful and be individualistic in your approach to a successful future, and those who ordain pessimism and fear that we are doomed.

What the future holds for us is which stories we hold on to and how we act on them.

Answer the following questions:

13. Our knowledge is a collection of:
  - (a) all stories that we have heard during our life-time
  - (b) some stories that we remember
  - (c) a few stories that survive
  - (d) some important stories
14. Story telling is:
  - (a) an art
  - (b) a science
  - (c) in our genes
  - (d) the essence of what makes us human
15. How the future will turn out to be, depends upon the stories?
  - (a) We collectively choose to believe in
  - (b) Which are repeatedly narrated
  - (c) Designed to spread fear and tension
  - (d) Designed to make prophecy

16. Rational optimists:
1. Look for opportunities.
  2. Are sensible and cheerful.
  3. Are selfishly driven.
- Identify the correct answer from the codes given below:
- (a) 1, 2 and 3                      (b) 1 only  
(c) 1 and 2 only                    (d) 2 and 3 only
17. Humans become less selfish when:
- (a) they work in large groups
  - (b) they listen to frightening stories
  - (c) they listen to cheerful stories
  - (d) they work in solitude
18. 'Practical Possibles' are the ones who:
- (a) follow Midway Path
  - (b) are doom-mongers
  - (c) are self-centred
  - (d) are cheerful and carefree
19. Effectiveness of communication can be traced from which of the following?
1. Attitude surveys
  2. Performance records
  3. Students attendance
  4. Selection of communication channel
- Select the correct answer from the codes given below:
- (a) 1, 2, 3 and 4                    (b) 1, 2 and 3  
(c) 2, 3 and 4                    (d) 1, 2 and 3
20. **Assertion (A):** Formal communication tends to be fast and flexible.
- Reason (R):** Formal communication is a systematic and orderly flow of information.
- (a) Both (A) and (R) are correct and (R) is correct explanation of (A)
  - (b) Both (A) and (R) are correct, but (R) is not correct explanation of (A)
  - (c) (A) is correct but, (R) is false
  - (d) (A) is false but, (R) is correct
21. Which of the following are the characteristic features of communication?
1. Communication involves exchange of ideas, facts and opinions.
  2. Communication involves both information and understanding.
  3. Communication is a continuous process.
  4. Communication is a circular process.
- Select the correct answer from the codes given below:
- (a) 1, 2 and 3                    (b) 1, 2 and 4  
(c) 2, 3 and 4                    (d) 1, 2, 3 and 4
22. The term 'grapevine' is also known as:
- (a) Downward communication
  - (b) Informal communication
  - (c) Upward communication
  - (d) Horizontal communication
23. Which of the following is not a principle of effective communication?
- (a) Persuasive and convincing dialogue
  - (b) Participation of the audience
  - (c) One-way transfer of information
  - (d) Strategic use of grapevine
24. In communication, the language is
- (a) The verbal code
  - (b) Intrapersonal
  - (c) The symbolic code
  - (d) The non-verbal code
25. The next term in the series is:  
2, 5, 9, 19, 37, ?
- (a) 73                                      (b) 75
  - (c) 78                                      (d) 80
26. In certain code MATHURA is coded as JXQEROX. The code of HOTELS will be:
- (a) LEQIBP                              (b) ELQBIP
  - (c) LEBIQP                              (d) ELIPQB
27. One day Prakash left home and walked 10 km towards south, turned right and walked 5 km, turned right and walked 10 km and turned left and walked 10 km. How many km will he have to walk to reach his home straight?
- (a) 10                                      (b) 20
  - (c) 15                                      (d) 30
28. A girl introduced a boy as the son of the daughter of the father of her uncle. The boy is related to the girl as:
- (a) Brother                              (b) Uncle
  - (c) Nephew                              (d) Son
29. In an examination 10,000 students appeared. The result revealed the number of students who have:
- passed in all five subjects = 5583  
passed in three subjects only = 1400  
passed in two subjects only = 1200  
passed in one subject only = 735  
failed in English only = 75

failed in Physics only = 145  
 failed in Chemistry only = 140  
 failed in Mathematics only = 200  
 failed in Bio-science only = 157

The number of students passed in at least four subjects is:

- (a) 6300                      (b) 6900  
 (c) 7300                      (d) 7900

30. At present a person is 4 times older than his son and is 3 years older than his wife. After 3 years the age of the son will be 15 years. The age of the person's wife after 5 years will be:

- (a) 42                          (b) 48  
 (c) 45                          (d) 50

31. If we want to seek new knowledge of facts about the world, we must rely on reason of the type:

- (a) Inductive                (b) Deductive  
 (c) Demonstrative        (d) Physiological

32. A deductive argument is invalid if:

- (a) Its premises and conclusions are all false  
 (b) Its premises are true but its conclusion is false  
 (c) Its premises are false but its conclusion is true  
 (d) Its premises and conclusions are all true

33. Inductive reasoning is grounded on:

- (a) Integrity of nature  
 (b) Unity of nature  
 (c) Uniformity of nature  
 (d) Harmony of nature

34. Among the following statements two are contradictory to each other. Select the correct code that represents them:

**Statements:**

- All poets are philosophers.
- Some poets are philosophers.
- Some poets are not philosophers.
- No philosopher is a poet.

**Codes:**

- (a) 1 and 2                      (b) 1 and 4  
 (c) 1 and 3                      (d) 2 and 3

35. Which of the codes given below contains only the correct statements? Select the code:

**Statements:**

- Venn diagram represents the arguments graphically.

- Venn diagram can enhance our understanding.
- Venn diagram may be called valid or invalid.
- Venn diagram is clear method of notation.

**Codes:**

- (a) 1, 2 and 3                      (b) 1, 2 and 4  
 (c) 2, 3 and 4                      (d) 1, 3 and 4

36. When the purpose of a definition is to explain the use or to eliminate ambiguity the definition is called:

- (a) Stipulative                      (b) Theoretical  
 (c) Lexical                          (d) Persuasive

**Direction for questions 37 to 42:**

Answer the questions based on the tabular data given below.

A company has 20 employees with their age (in years) and salary (in thousand rupees per month) mentioned against each of them:

S.No.	Age (in years)	Salary (in thousand rupees per month)
1.	44	35
2.	32	20
3.	54	45
4.	42	35
5.	31	20
6.	53	60
7.	42	50
8.	51	55
9.	34	25
10.	41	30
11.	33	30
12.	31	35
13.	30	35
14.	37	40
15.	44	45
16.	36	35
17.	34	35
18.	49	50
19.	43	45
20.	45	50

37. Classify the data of age of each employee in class interval of 5 years. Which class interval of 5 years has the maximum average salary?

- (a) 35-40 years                      (b) 40-45 years  
 (c) 45-50 years                      (d) 50-55 years

38. What is the frequency (%) in the class interval of 30-35 years?  
 (a) 20% (b) 25%  
 (c) 30% (d) 35%
39. What is the average age of the employees?  
 (a) 40.3 years (b) 38.6 years  
 (c) 47.2 years (d) 45.3 years
40. What is the fraction (%) of employees getting salary ₹ 40,000 per month?  
 (a) 45% (b) 50%  
 (c) 35% (d) 32%
41. What is the average salary (in thousand per month) in the age group 40-50 years?  
 (a) 35 (b) 42.5  
 (c) 40.5 (d) 36.5
42. What is the fraction of employees getting salary less than the average salary of all the employees?  
 (a) 45% (b) 50%  
 (c) 55% (d) 47%
43. Encoding or scrambling data for transmission across a network is known as:  
 (a) Protection (b) Detection  
 (c) Encryption (d) Decryption
44. Which of the following is not an output device?  
 (a) Printer (b) Speaker  
 (c) Monitor (d) Keyboard
45. Which of the following represents one billion characters?  
 (a) Kilobyte (b) Megabyte  
 (c) Gigabyte (d) Terabyte
46. Which of the following is not open source software?  
 (a) Internet explorer  
 (b) Fedora Linux  
 (c) Open office  
 (d) Apache Hi IF server
47. Which one of the following represents the binary equivalent of the decimal number 25?  
 (a) 10101 (b) 01101  
 (c) 11001 (d) 11011
48. Which is an instant messenger that is used for chatting?  
 (a) Altavista (b) MAC  
 (c) Microsoft Office (d) GoogleTalk
49. In which of the countries per capita use of water is maximum?  
 (a) USA (b) European Union  
 (c) China (d) India
50. India's contribution to total global carbon dioxide emissions is about:  
 (a) ~3% (b) ~6%  
 (c) ~10% (d) ~15%
51. Two earthquakes A and B happen to be of magnitude 5 and 6 respectively on Richter Scale. The ratio of the energies released EB/EA will be approximately:  
 (a) ~8 (b) ~16  
 (c) ~32 (d) ~64
52. Which of the following combinations represent renewable natural resources?  
 (a) Fertile soil, fresh water and natural gas  
 (b) Clean air, phosphates and biological diversity  
 (c) Fishes, fertile soil and fresh water  
 (d) Oil, forests and tides
53. In the recently launched Air Quality Index in India, which of the following pollutants is not included?  
 (a) Carbon monoxide  
 (b) Fine particulate matter  
 (c) Ozone  
 (d) Chlorofluorocarbons
54. The factors which are most important in determining the impact of anthropogenic activities on environment are:  
 (a) Population, affluence per person, land available per person  
 (b) Population, affluence per person and the technology used for exploiting resources  
 (c) Atmospheric conditions, population and forest cover  
 (d) Population, forest cover and land available per person
55. The session of the parliament is summoned by:  
 (a) The President  
 (b) The Prime Minister  
 (c) The Speaker of the Lok Sabha  
 (d) The Speaker of the Lok Sabha and the Chairman of the Rajya Sabha
56. Civil Service Day is celebrated in India on:  
 (a) 21st April (b) 24th April  
 (c) 21st June (d) 7th July



57. The South Asia University is situated in the city of:  
(a) Colombo (b) Dhaka  
(c) New Delhi (d) Kathmandu
58. The University Grants Commission was established with which of the following aims?
1. Promotion of research and development in higher education
  2. Identifying and sustaining institutions of potential learning
  3. Capacity building of teachers
  4. Providing autonomy to each and every higher educational institution in India
59. The Gross Enrolment Ratio (GER) in institutions of higher education in India at present (2015) is about:  
(a) 8 percent (b) 12 percent  
(c) 19 percent (d) 23 percent
60. The total number of central universities in India in April 2015 was:  
(a) 08 (b) 14  
(c) 27 (d) 43

□□□

Select the correct answer from the codes given below:

## Answer Key

Q.No.	Answer	Topic's Name	Chapter's Name
1	d	Bloom's taxonomy	Teaching aptitude
2	c	Classroom teaching	Teaching aptitude
3	b	Teaching aids	Teaching aptitude
4	a	Teaching techniques	Teaching aptitude
5	d	Types of test	Teaching aptitude
6	d	Qualities of good teachers	Teaching aptitude
7	d	Meaning of research	Research aptitude
8	a	Qualities of good thesis	Research aptitude
9	a	Types of research	Research aptitude
10	b	Types of hypothesis	Research aptitude
11	a	Types of research	Research aptitude
12	d	Questionnaire	Research aptitude
13	c	Inference based	Comprehension
14	d	Fact based	Comprehension
15	a	Inference based	Comprehension
16	a	Inference based	Comprehension
17	a	Inference based	Comprehension
18	a	Inference based	Comprehension
19	b	Effective communication	Communication
20	d	Types of communication	Communication
21	d	Characteristics of communication	Communication
22	b	Terminology in communication	Communication
23	c	Effective communication	Communication
24	a	Characteristics of communication	Communication
25	b	Number series	Logical reasoning
26	b	Alphabetical series	Logical reasoning
27	c	Direction	Logical reasoning
28	a	Blood relation	Logical reasoning
29	a	Data analysing	Logical reasoning
30	d	Age and ratio	Logical reasoning
31	a	Types of argument	Logical reasoning
32	b	Deductive argument	Logical reasoning
33	c	Inductive argument	Logical reasoning
34	c	Syllogism	Logical reasoning
35	b	Venn diagram	Logical reasoning
36	c	Types of definition	Logical reasoning
37	d	Data interpretation	Data interpretation
38	d	Data interpretation	Data interpretation
39	a	Data interpretation	Data interpretation
40	a	Data interpretation	Data interpretation

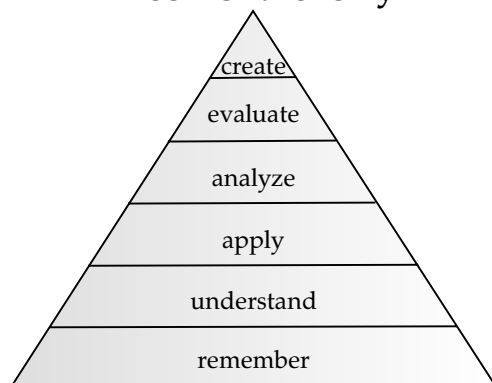
41	b	Data interpretation	Data interpretation
42	c	Data interpretation	Data interpretation
43	c	Terminology in communication	Communication
44	d	Input-output devices	Information communication & technology
45	c	Terminology	Information communication & technology
46	a	Types of software	Information communication & technology
47	c	Binary numbers	Information communication & technology
48	d	Software	Information communication & technology
49	b	Per capita consumption of water	People and environment
50	b	Environment protection	People and environment
51	c	Energy resources	People and environment
52	c	Energy resources	People and environment
53	d	Air quality index	People and environment
54	b	Environment protection	People and environment
55	a	Parliament and polity	People and environment
56	a	Important days	People and environment
57	c	Universities of india	Higher education system of india
58	b	University Grants Commission	Higher education system of india
59	d	Enrollment ratio	Higher education system of india
60	d	Universities of india	Higher education system of india

## ANSWERS WITH EXPLANATIONS

1. **Option (d) is correct.**

Evaluating is the highest level of cognitive ability from the given options. Levels of Bloom's taxonomy are:

### Bloom's Taxonomy



**Produce new or original work**

Design, assemble, construct, conjecture, develop, formulate, author, investigate

**Justify a stand or decision**

Appraise, argue, defend, judge, select, support, value, critique, weigh

**Draw connections among Ideas**

Differentiate, organize, relate, compare, contrast, distinguish, examine, experiment, question, test

**Use Information in new situations**

Execute, implement, solve, use, demonstrate, interpret, operate, schedule, sketch

**Explain ideas or concepts**

Classify, describe, discuss, explain, identify, locate, recognize, report, select, translate

**Recall facts and basic concepts**

Define, duplicate, list, memorize, repeat, state

2. **Option (c) is correct.**

Knowledge, classroom activities encouraging learning and experiential learning impact the teaching learning process but social and economical environment does not affect the teaching. Even a teacher from a backward social group or poor or middle class family can be a good teacher with his/her teaching and encouraging skills.

3. **Option (b) is correct.**

Teaching aids are the audio, visual and audio-visual tools which are helpful in learning easily. From the given statements only A, B and C are correct as teaching aids help to make learning long, they help to learn easily and quickly and make the learning process interesting. (Rote, punishment, ignoring are the words which are having negative meaning which should be avoided during exam if question is having positive aspects.)

4. **Option (a) is correct.**

Techniques which are used by a teacher in teaching do not include self study. Self study is a technique of learning not of teaching.

5. **Option (d) is correct.**

Any test that measures the accomplishment of an individual after a period of training or learning (NM DOWNIE).

6. **Option (d) is correct.**

Motivation in the teaching learning process is the most important thing. A teacher should inspire all the students to learn which helps in various ways like making learning easy and smooth, permanent learning and many other things like this.

7. **Option (d) is correct.**

All the given statements are correct with reference to research. Following are the characteristics of research:

1. Research refers to a series of systematic activities.
2. These activities are undertaken to find out the solution of a problem.
3. Research is logical and unbiased
4. It is a process
5. It is done with various objectives
6. Research should be valid and reliable
7. It should be objective, not subjective

- 8. Option (a) is correct.**  
All the given statements are correct with reference to a good thesis.  
Thesis is the research result or output which a research scholar writes after conducting his/her research. A good thesis should be
1. Reliable
  2. Valid
  3. Objective
  4. Accurate
  5. Systematic
  6. Clear
  7. Well written
  8. With least grammatical errors
- 9. Option (a) is correct.**  
Cognitive theory of Jean Piaget is a fundamental research. Fundamental research is the research in which original and new data is used. It is done with the objective of creating new theories and better understanding of the phenomenon. Fundamental research is not likely to have any practical application at present nor even in future.  
Applied research is when results of fundamental research are applied to any other situation.  
Action research is a cyclic research in which the researcher tries to find out a solution for an immediate problem.  
Evaluation research is done to evaluate the performance with the help of testing in various ways.
- 10. Option (b) is correct.**  
In null hypothesis, no perception is made by the researcher. It is assumed that all the variables are equal or they have no relationship between the variables. In Other words, the Null hypothesis believes that there is no significant relationship between the variables. For example: Men and women are equally intelligent, there is no effect of sunlight on the growth of plants etc.
- 11. Option (a) is correct.**  
Findings of historical research can not be applied or generalized to other situations because historical research is basically a descriptive research in which any situation, event, process or phenomenon is described which had occurred in history. This aims to describe the past situation and it helps to make decisions for the present and future.
- 12. Option (d) is correct.**  
All given steps are required to design a questionnaire. Questionnaire is a set of questions which are formed to take surveys or data from the desired population. The steps to form a questionnaire are:
1. Deciding the required information
  2. Determining primary and secondary objectives of the study
  3. Review the literature which are available
  4. Prepare a draft of the questionnaire
  5. Review the drafted questionnaire to detect errors and improvements.
  6. Forming the final questionnaire.
- 13. Option (c) is correct.**  
According to the passage, our knowledge is a collection of a few stories that survive.
- 14. Option (d) is correct.**  
Storytelling is an essence of life this is shown by the line of passage. "It is the an essence what makes us human."
- 15. Option (a) is correct.**  
According to the given passage our future turns out to be dependent upon the stories that we collectively believe in.
- 16. Option (a) is correct.**  
As per the passage, all given statements are the qualities of rational optimists. They are always try to seek opportunities, they are cheerful and sensible and they work less selfishly.
- 17. Option (a) is correct.**  
According to the passage, people work less selfishly when they work in large groups.
- 18. Option (a) is correct.**  
Practical possible people are the ones who try to find and follow the midway path. They sit between the people who are fully cheerful or fine and the people who ordain pessimism and have fear.  
(Exam tip: Questions should be read first and then a student should go to the passage as reading passage tends to take more time and confusion in exam time.)
- 19. Option (b) is correct.**  
Effective communication refers to conveying the messages to others or the receiver in an effective and efficient way and with the meaning by which it was sent by the sender. All the given statements are the characteristics

of effective communication except student attendance.

**20. Option (d) is correct.**

The Assertion-Formal communication tends to be fast and flexible is incorrect because this characteristic is of informal communication. But the statement of reason that formal communication is a systematic and orderly flow of information is correct.

**21. Option (d) is correct.**

All the statements are correct with the reference to the characteristics of communication. Communication is a two way, continuous and circular process which involves the exchange of ideas, facts, information and other messages with the motive of information circulation and creating understanding between sender and receiver.

**22. Option (b) is correct.**

Grapevine communication is another name of informal communication. Informal communication is done with friends and family Where no formalities are followed.

Downward and upward communication are the sub types of vertical communication.

Horizontal communication is the communication which is done between the people working on the same level or position.

**23. Option (c) is correct.**

One way communication is not a principle of effective communication. An effective communication is always two way interaction. Where messages and ideas are conveyed from both sides and feedback is needed in a communication process to make it effective.

**24. Option (a) is correct.**

Language is in verbal code in communication.

**25. Option (b) is correct.**

$$2 \times 2 + 1 = 5$$

$$5 \times 2 - 1 = 9$$

$$9 \times 2 + 1 = 19$$

$$19 \times 2 - 1 = 37$$

$$37 \times 2 + 1 = 75$$

**26. Option (b) is correct.**

Step-1 Number the alphabet. For example a-1, b-2 in every alphabetical reasoning question to understand the pattern.

In this coding every alphabet is replaced with the alphabet having 3 back numbers.

M (number-13) is replaced by j (number-10) and a (number-1) is replaced by x(number-24)

M A T H U R A

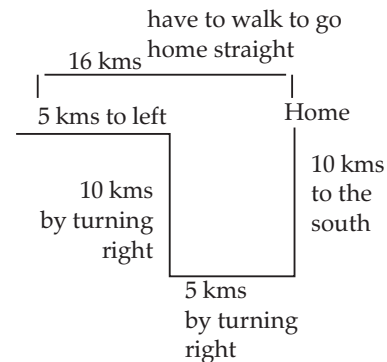


J X Q E R O X

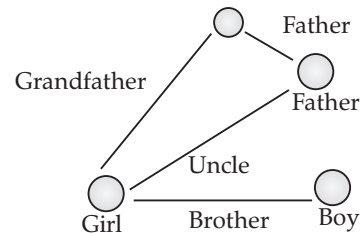
H O T E L S will be coded as E L Q B I P

**27. Option (c) is correct.**

Prakash has to walk 15 kms straight to reach home. (Exam tip: Imagine yourself walking with the same directions as given in the question. Solution will be easy.)



**28. Option (a) is correct.**



**29. Option (a) is correct.**

Students passed in all 5 subjects = 5583 (they must have passed 4 subjects) Students failed in each subject only (they passed rest 4 subjects) = 75 + 145 + 140 + 200 + 157 = 717 students  
Total students passed at least 4 subjects = 5583 + 717 = 6300 students.

**30. Option (d) is correct.**

Let the age of Son = X. Then as per the question age of his father will be = 4X Age of his mother = 4X - 3.

After 3 years the son will be of 15 years (given)  
Current age of the son = 15 - 3 = 12 years  
Current age of his father = 12 × 4 = 48 years  
Current age of his mother = 48 - 3 = 45 years.

Age of his mother after 5 years = 45 + 5 = 50 years.

**31. Option (a) is correct.**

Inductive research is used to get new knowledge. In inductive research, the researcher starts observation and formulates a generalized theory. It goes from specific to general. For example, a kid observes that a jug of glass is broken and he saw that mirror broken out with a hit. Then he formulates the theory that all the things of glass get broken.

Deductive research is just opposite to inductive research.

**32. Option (b) is correct.**

Conclusion can not be false of a valid deductive argument. Deductive argument is valid if its premises and conclusion are both true. Value of an argument is not a guarantee of a valid conclusion.

**33. Option (c) is correct.**

Base of inductive argument or reasoning is uniformity of nature. It goes from specific to general.

**34. Option (c) is correct.**

Contradictory statements are those statements that can not be true at the same time. Statement C "some poets are not philosopher" is contradictory to statement A "All poets are philosophers".

**35. Option (b) is correct.**

All the given statements are correct with reference to venn diagram except the statement that venn diagram may be called valid or invalid. Being called valid or invalid is a characteristic of an argument.

**36. Option (c) is correct.**

Lexical definition is the definition which is given with the purpose of explaining the use or eliminating ambiguity of the term.

**37. Option (d) is correct.**

Age groups	Frequency	Average salary
30-35	7	$20 + 20 + 25 + 30 + 35 + 35 + 35 / 7 = 28.57$
35-40	2	$40 + 30 / 2 = 37.5$
40-45	6	$35 + 35 + 50 + 30 + 45 + 45 / 6 = 40$
45-50	2	$50 + 50 / 2 = 50$
50-55	3	$55 + 60 + 45 / 3 = 53.33$

**38. Option (d) is correct.**

Frequency of class 30–35 = 7 Total number of workers = 20

% of frequency of group 30–35 =  $7 \times 100 / 20 = 35\%$

**39. Option (a) is correct.**

Average age of employees = Sum of ages/no. of workers

Sum of ages =  $44 + 32 + 54 + 42 + 31 + 53 + 42 + 51 + 34 + 41 + 33 + 31 + 30 + 37 + 44 + 36 + 34 + 49 + 43 + 45 = 806$

Number of workers = 20

Average age of workers =  $806 / 20 = 40.3$  years.

**40. Option (a) is correct.**

Workers getting salary equal or more than 40000 = 9 workers

Total workers = 20

Fraction (%) of workers getting equal or more than 40000 salary =  $9 \times 100 / 20 = 45$  workers.

**41. Option (b) is correct.**

Employees in the group 40–50 = 8 employees

Sum of salaries of this age group =  $35 + 35 + 50 + 30 + 45 + 50 + 45 + 50 = 340$

Average salary of this age group =  $340 / 8 = 42.5$  (in thousands)

**42. Option (c) is correct.**

Average salary of all the employees =  $35 + 20 + 45 + 35 + 20 + 60 + 50 + 55 + 25 + 30 + 30 + 35 + 35 + 40 + 45 + 3$

$5 + 35 + 50 + 45 + 50 = 775$

No. of employees = 20 Average salary = 38.75 (000)

Employees getting salary less than 38.75 = 11 employees

% of employees getting salary less than average salary of all employees =  $11 \times 100 / 20 = 55\%$ .

**43. Option (c) is correct.**

Encoding data for transmission across a network is known as Encryption.

Decryption refers to decoding the encoded data.

**44. Option (d) is correct.**

Keyboard is an input device.

**45. Option (c) is correct.**

Gigabyte represents about one billion characters. It is a common modem hardware unit. 1 Gigabyte = 1024 megabyte.

**Prefixes**

• Tera	T	1,000,000,000,000	$10^{12}$
• giga-	G	1,000,000,000	$10^9$
• mega-	M	1,000,000	$10^6$
• kilo-	k	1,000	$10^3$
• deci-	d	0.1	$10^{-1}$
• centi-	c	0.01	$10^{-2}$
• milli-	m	0.001	$10^{-3}$
• micro-	m	0.000001	$10^{-6}$
• nano-	n	0.000000001	$10^{-9}$
• pico-	p	0.000000000001	$10^{-12}$

**46. Option (a) is correct.**

Internet explorer is not an open source software. Open source software is made by many people and distributed under a license to use, study and make changes.

**47. Option (c) is correct.**

Binary number of number 25 is 11001.

Step 1: keep dividing the number with 2. (ignore decimal number)

Step 2: give code 1 to the odd number and number 0 to even numbers.

Step 3: write the binary code number from the last one. In this- 11001.

2	25	1
2	12	0
2	6	0
2	3	1
2	1	1

**48. Option (d) is correct.**

Google talk is a chatting site by Google.

**49. Option (b) is correct.**

The answer for this question is the European Union but now Estonia is the country with maximum per capita water use with 1213.4 cubic meter per capita use of water annually.

**50. Option (b) is correct.**

contribution of India in global carbon dioxide emission was 6% in 2015 but now it is 7% as per the recent reports. Country emits about 3 gigatonnes of carbon dioxide per year. India is the third largest carbon dioxide emission country after China and the United States.

**51. Option (c) is correct.**

Richter scale is a very common scale to measure magnitude of earthquake. If two earthquakes happen with magnitudes 5 and 6, the ratios of the energies will be 32:1. Measurements and their effects on this scale are:

Richter magnitude	Earthquake effects
0-2	Not felt by people
2-3	Felt little by people
3-4	Ceiling lights swing
4-5	Walls crack
5-6	Furniture moves
6-7	Some buildings collapse
7-8	Many buildings destroyed
8-Up	Total destruction of buildings, bridges and roads

**52. Option (c) is correct.**

Fishes, fertile soil and freshwater are renewable natural resources. Renewable resources refers to the resources which can be used repeatedly and will not go out of use or stock because they are naturally replaced and we can get it again.

**53. Option (d) is correct.**

EPA calculates the AQI for five major air pollutants: 1- ground level ozone, 2- particle pollution, 3- carbon monoxide, 4- sulfur dioxide, 5- nitrogen dioxide.

**54. Option (b) is correct.**

Pollution, Exploitation of natural resources and affluence of activities on personal health and environment are the major factors which helps to determine the impact of anthropogenic activities on the environment. Anthropogenic activities are the processes, activities or effects which are generated by various human activities like mining, Greenhouse gasses effect etc.

**55. Option (a) is correct.**

The president can summon the session of the parliament. The president is the former chairman of Lok Sabha and Joint session of Lok Sabha and Rajya Sabha. In present, The president of India is Mr. Ram Nath Kovind and Speaker of Lok Sabha is Mr. Om Birla.

**56. Option (a) is correct.**

Civil Service Day is celebrated on 21st April every year.



**57. Option (c) is correct.**

South Asia University is situated in New Delhi. It is sponsored by the eight member countries of South Asian Association For Regional Cooperation (SAARC).

**58. Option (b) is correct.**

The University Grant Commission (UGC) was established in 1956 by an act. This was established with the following objectives:

1. Coordination
2. Standardization in higher education institutes.
3. Providing recognition in universities in India
4. Promotion of research and development in higher education in India.
5. Promotion of qualities of teachers in higher education institutes.

6. Capacity building of teachers with research, training and standardization.
7. Identifying institutes with a potential learning environment.

**59. Option (d) is correct.**

Gross enrolment ratio or GER is the ratio of students completing higher secondary and the students getting enrolled in higher educational institutions. This was 23% in 2015 and now it is 27.1% as per the survey of AISHE in 2019-20.

**60. Option (d) is correct.**

The number of central universities in India according to the list published by UGC on 31st March, 2021 is 54. In which Uttar Pradesh has a maximum number of central universities with 6 universities.



# UGC NET PAPER-1

## GENERAL APTITUDE

# Sample Question Paper-1

Time Allotted: 1 Hour

Maximum Marks: 100

### Important Instructions:

1. Each question carries 2 marks.
2. This paper consists of fifty (50) multiple-choice type of questions.
3. Each item has four alternative responses marked (a), (b), (c) and (d). You have to darken the oval as indicated below on the correct response against each item.  
**Example:** where (c) is the correct response.
4. Your responses to the items are to be indicated in the **Answer Sheet**.
5. **Use of any calculator or log table etc., is prohibited.**
6. **Negative Marking: For each incorrect answer 0.5 marks shall be deducted.**

### Direction for questions 1 to 5:

Based on the data in the table, answer the questions that follow. The following table presents the percentage breakup of employees and the ratio of male to female employees working in five different organisations (A to E). There is a total number of 35,000 employees working in all five organisations.

Organisation	Percentage (%) of employees	Ratio of Male to Female employees
A	18	3:7
B	22	11:9
C	31	3:2
D	15	2:3
E	14	1:3

1. The total number of employees in Organisation D is approximately what percent of the total number of employees in Organisation C?  
(a) 48.39% (b) 44.56%  
(c) 48.20% (d) 45.38%
2. What is the ratio of the number of employees in Organisation C to the number of employees in Organisation A?  
(a) 216:278 (b) 217:126  
(c) 216:217 (d) 200:100
3. What is the sum total of the number of females in Organisation D and the number of males in Organisation E?  
(a) 4,375 (b) 4,385  
(c) 4,395 (d) 4,335
4. What is the total number of females in all the five organisations together?  
(a) 15,960 (b) 35,000  
(c) 19,040 (d) 19,140
5. What is the difference between the number of males in Organisation D and the number of females in Organisation B?  
(a) 3,465 (b) 1,365  
(c) 2,100 (d) 1,580
6. Feedforward is:  
(a) Information provided before sending the primary message is  
(b) Brief introduction of the message  
(c) To do or say something before something  
(d) Sign to convey something
7. Name the fallacy committed in the argument  
All dogs are mammals.  
No cats are dogs.  
Therefore, no cats are mammals.  
Choose the correct answer from the options given below.  
(a) Existential Fallacy  
(b) Illicit Major  
(c) Illicit Minor  
(d) Undistributed Middle
8. Ravi's salary is increased by 20%. On the increased salary, the tax rate is 10% higher. The percentage increase in tax liability is:  
(a) 32% (b) 22%  
(c) 20% (d) 40%
9. Below are given two sets – Disease (Set-I) and Mode of spread (Set-II). Match the two sets and

indicate your answer by selecting the correct code:

Disease	Mode of spread
A. Cholera	I. Lack of water to maintain cleanliness
B. Trachoma	II. Involves water contact but not ingestion
C. Schistosomiasis	III. Ingestion of polluted water
D. Dengue	IV. Requires host

Choose the correct code from the options given below.

- (a) A - II, B - III, C - I, D - IV  
 (b) A - III, B - I, C - II, D - IV  
 (c) A - IV, B - II, C - II, D - III  
 (d) A - III, B - II, C - I, D - IV
10. What per cent (%) of the total non-renewable energy is used in India?  
 (a) 32% (b) 56%  
 (c) 63% (d) 75%
11. Given below are two statements.  
**Statement I:** People use verbal cues more than non-verbal cues.  
**Statement II:** Verbal cues have better believability than non-verbal cues.  
 In light of the above statements, choose the correct answer from the options given below.  
 (a) Statement I is correct but statement II is incorrect.  
 (b) Statement II is correct but statement I is incorrect.  
 (c) Both statements I and II are incorrect.  
 (d) Both statements I and II are correct.
12. Which of the following characteristic(s) is/are not related to a competent communicator?  
 A. Culturally neutral  
 B. Culturally sensitive  
 C. Totally ethical  
 D. Situationally ethical  
 E. An effective listener  
 (a) B, C and E only (b) A and D only  
 (c) A, B, C, D and E (d) A, B and C only
13. Which of the following is not a private university?  
 (a) BITS Pilani  
 (b) Techno India University  
 (c) Guru Nanak Dev University  
 (d) Jaipur National University

14. Below are given two sets – Erikson's Psycho-social development (Set-I) and Stage (Set-II). Match the two sets and indicate your answer by selecting the correct code:

Erikson's Psycho-social development	Stage
A. Intimacy vs. Isolation	I. Normally after retirement
B. Ego integrity vs. Despair	II. Much of adulthood
C. Generativity vs. Stagnation	III. During adolescence
D. Identity vs. Confusion	IV. During the 20s

Choose the correct answer from the options given below.

- (a) A - IV, B - I, C - II, D - III  
 (b) A - IV, B - III, C - II, D - I  
 (c) A - IV, B - II, C - I, D - III  
 (d) A - IV, B - I, C - III, D - II
15. Which one of the following Sustainable Development Goals (SDGs) are related to human capital formation for the country?  
 A. SDG-1 B. SDG-2  
 C. SDG-3 D. SDG-4  
 E. SDG-7  
 (a) A, B and C only (b) A, C and D only  
 (c) A, B, C and D only (d) A, B, C, D and E
16. The term 'open learning' represent approaches that do not focus on  
 A. Opening access to education and training provision  
 B. Freeing learners from the constraints of time and place  
 C. Learning and evaluation without a specified curriculum  
 D. Offering flexible learning opportunities to individuals and groups of learners  
 E. Making students free from any educational loads  
 Choose the correct answer from the options given below.  
 (a) A, B and D only (b) C and E only  
 (c) A, B and C only (d) A, B, C, D and E
17. Which of the following philosophies does not believe in the material world?  
 (a) Rationality/Logic (b) Idealism  
 (c) Pragmatism (d) Conservatism

18. What was the first commitment period of Kyoto Protocol of 1997?

- (a) 1997-2001                      (b) 2001-2020  
(c) 2008-2012                      (d) 1997-2012

19. Choose the correct answer from the given options.

- A. At 5% rate of simple interest, a certain sum will be doubled in 20 years.  
B. A sum becomes double in 10 years. The annual rate of simple interest is 20%.  
C. ₹1000 will become ₹1331 in 3 years at a compound interest rate of 10% per annum.

Which of the above statements is/are CORRECT?

- (a) All statements are correct.  
(b) All statements are incorrect.  
(c) Only statements A and C are correct.  
(d) Only statements B and C are correct.

20. Given below are two statements, one is labelled as Assertion A and the other is labelled as Reason R.

**Assertion A:** A good computer networking solution can be a barrier for your business.

**Reason R:** With computer networking, you can cut back on costs and allow for efficient use of resources.

In light of the above statements, choose the correct answer from the options given below.

- (a) Both A and R are true and R is the correct explanation of A.  
(b) Both A and R are true and R is the correct explanation of A.  
(c) A is correct but R is incorrect.  
(d) A is incorrect but R is correct.

21.

Computer terms	Example
A. Operating system	I. Pentium
B. Application Software	II. Linux
C. Processor	III. Router
D. Networking Device	IV. Anti-virus

- (a) A - II, B - IV, C - I, D - III  
(b) A - I, B - III, C - II, D - IV  
(c) A - III, B - IV, C - I, D - II  
(d) A - IV, B - I, C - III, D - II

22. Non-verbal communication does not make use of:

- A. Behaviour to generate meanings  
B. Emotional meanings  
C. A non-clear system of rules  
D. Verbal finessé  
E. Clarity in abstraction

Choose the correct answer from the options given below:

- (a) A, B and C only                      (b) D and E only  
(c) A, B, C, D only                      (d) A, B, C, D and E

23. Propositions - Square of Opposition

A. If 'A' is False	I. 'A' and 'T' are False
B. If 'E' is True	II. 'E' is False; 'T' is True
C. If 'T' is False	III. 'E' and 'O' are True
D. If 'O' is True	IV. 'E' and 'T' are Undetermined

Choose the correct answer from the options given below.

- (a) A - I, B - IV, C - III, D - II  
(b) A - IV, B - II, C - III, D - I  
(c) A - IV, B - I, C - III, D - II  
(d) A - IV, B - III, C - I, D - II

24. Given below are two statements:

**Statement I:** Tablet computers have touch screens.

**Statement II:** A tablet computer does not have a keyboard.

In light of the above statements, choose the correct answer from the options given below.

- (a) Both A and R are true and R is the correct explanation of A.  
(b) Both A and R are true and R is the incorrect explanation of A.  
(c) A is correct but R is incorrect.  
(d) A is incorrect but R is correct.

25. Arrange the following optical storage devices in decreasing order of their storage capacity.

- A. DVD                                      B. CD-ROM  
C. Blue-Ray

Choose the correct answer from the options given below:

- (a) B, A, C                                      (b) C, A, B  
(c) B, C, A                                      (d) A, C, B

26. 'Contagious' spreading of behaviours through imitation, is known as

- (a) Norm effect                                      (b) Random effect  
(c) Ripple effect                                      (d) Scripted effect

27. Which of the following are the elements which should be ignored in the case study method?

- A. Negatively oriented  
B. Appreciation oriented  
C. Particularistic  
D. Descriptive  
E. Inductive

Choose the correct answer from the options given below:

- (a) C, D and E only      (b) A and B only
- (c) C and D only        (d) A and C only

28. Given below are two statements:

**Statement I:** A 60 m long train passes a 90 m platform in 10 seconds. The speed of the train is 54 km/hour.

**Statement II:** If the ratio of the speeds of A and B is  $a : b$ , then the ratio of the time taken by them to cover the same distance is  $a : b$ .

In light of the above statements, choose the correct answer from the options given below:

- (a) Statement I is correct but statement II is incorrect.
  - (b) Statement II is correct but statement I is incorrect.
  - (c) Both statement I and statement II are incorrect.
  - (d) Both statements I and II are correct.
29. Which of the following statements about desktop and laptop computers are false?
- A. Most modern laptop computers have built-in webcams.
  - B. Desktop computers are not very portable.
  - C. All desktop computers have built-in touchpad.
  - D. Laptop computers are rarely supplied with a mouse.

Choose the correct answer from the options given below:

- (a) A, B and D              (b) C only
  - (c) A and B only        (d) A, C and D
30. What is the function of NIRF?
- (a) Providing a framework for ranking of higher educational institutions
  - (b) institutions
  - (c) Providing grants to colleges
  - (d) Providing framework for curriculum for universities
  - (e) All of the above

31. Below are given two sets – Scale (Set-I) and Characteristics (Set-II). Match the two sets and indicate your answer by selecting the correct code:

Scale	Characteristics
A. Arbitrary Scale	I. Attitude statements are decided by judges
B. Thurstone Scale	II. Summated ratings
C. Likert Scale	III. Consists of seven spaces between two bipolar adjectives
D. Semantic Differential	IV. Questions are selected on an a priori basis

Choose the correct code from the options given below.

- (a) A - I, B - II, C - III, D - I
  - (b) A - IV, B - II, C - I, D - III
  - (c) A - IV, B - III, C - I, D - II
  - (d) A - IV, B - I, C - II, D - III
32. If the wind speed increases from 4.0 m/s to 5.0 m/s, the power output from an ideal windmill will increase by a factor of about:
- (a) ~2                                      (b) ~4
  - (c) ~5                                      (d) ~16
33. In CBCS, Ability Enhancement Courses are of two kinds. Which of the following are NOT included in them:
- A. Ability Enhancement Compulsory Courses
  - B. Skill Enhancement Compulsory Courses
  - C. Ability Enhancement Elective Courses
  - D. Skill Enhancement Elective Courses
  - E. Skill Enhancement Courses

Choose the correct answer from the options given below:

- (a) A and E only              (b) A, B and C only
  - (c) B, C and D only        (d) A and E only
34. A man weighs 75% of his own weight plus 39 lbs. What is the measure of his 60% weight approximately?
- (a) 150 lbs                              (b) 148 lbs
  - (c) 149 lbs                              (d) 156 lbs
35. The example 'sound is eternal because it is caused' represents which of the following Hetvabhasa?
- (a) Ashrayāsiddh              (b) Kālātita
  - (c) Svarūpāsiddha        (d) Viruddha
36. It is observed that India is being a point of attraction for students of many other countries. But only a few students come and study there. What are the reasons which are demotivating them to come to India?
- A. Lack of residential accommodation for foreign students
  - B. Difficulties in recognition of international qualification
  - C. Rigid admission process
  - D. Lack of enthusiasm among teachers
  - E. Lack of enthusiasm among students

Choose the correct answer from the options given below:

- (a) A and B only              (b) A, B and C only
  - (c) A, C and E only        (d) A, B, C, D and E
37. Below are given two sets – Set-I and Set-II. Match the two sets and indicate your answer by selecting the correct code:

A. Sāmānyalaksana Pratyaksa	I. Intuitive perception of all objects-past, distant and future due to supernormal powers generated by meditation
B. JñanaLaksana Pratyaksa	II. When objects are not actually present to sense but are conveyed to it through a special medium
C. Yogaj Pratyaksa	III. Perception of an object which is in contact with senses through previous knowledge of itself
D. Alaukika Pratyaksa	IV. The perception of a whole class of objects through a generic property

Choose the correct code from the options given below.

- (a) A - IV, B - III, C - I, D - II  
 (b) A - IV, B - III, C - II, D - I  
 (c) A - IV, B - II, C - III, D - I  
 (d) A - II, B - III, C - I, D - IV

38. **Statement I:** In all interactions, a message is sent and a message is received. Sometimes teachers believe they are sending one message, but their voices, body language, choice of words, and gestures may communicate a different message.

**Statement II:** To deal with cyberbullying, parents should be encouraged to keep computers in a separate room in the house where the child can use it privately.

In light of the above statements, choose the most appropriate answer from the options given below:

- (a) Statement I is correct but statement II is incorrect.  
 (b) Statement II is correct but statement I is incorrect.  
 (c) Both statement I and statement II are incorrect.  
 (d) Both statements I and II are correct.
39. Media kits are used in:
- (a) A package of information, assembled by a company, to provide basic information about itself to reporters.

- (b) Package of media files.  
 (c) Information about a company which is made digitally by the income tax department.  
 (d) A digitally kept folder which includes all kinds of media files of a particular field.

40. Given below are two statements:

**Statement I:** Qualitative research is impressionistic and objective.

**Statement II:** Quantitative research has a lower level of possibility of generalising the findings.

In light of the above statements, choose the correct answer from the options given below:

- (a) Statement I is correct but statement II is incorrect.  
 (b) Statement II is correct but statement I is incorrect.  
 (c) Both statement I and statement II are incorrect.  
 (d) Both statements I and II are correct.
41. Which among the following are the components of decision traps to illustrate what needs to be a possible evaluatory framework to monitor the learning process?

- A. Overconfidence      B. Coaching  
 C. Frame blindness      D. Taking shortcuts  
 E. Persistent misconception

Choose the correct answer from the options given below:

- (a) A and B only      (b) A, C and D only  
 (c) A, B and C only      (d) A, C and E only
42. Which of the following reliability techniques are used in qualitative research?
- A. Diachronic reliability  
 B. Quixotic reliability  
 C. Synchronic reliability  
 D. Holsti's constant  
 E. Chronbach's alpha

Choose the correct answer from the options given below:

- (a) A, B and C only      (b) B, C and D only  
 (c) A, B, C and E only      (d) D and E only
43. From the options given below, pick the CORRECT sequence in the context of constituent parts of inference:
- (a) Pratijña, Udaharana, Hetu, Upanaya, Nigamana  
 (b) Pratijña, Hetu, Upanaya, Nigamana, Udaharana,  
 (c) Pratijña, Hetu, Nigamana, Udaharana, Upanaya  
 (d) Pratijña, Hetu, Udaharana, Upanaya, Nigamana

44. What number should replace the question mark (?)?  
5, 12, 23, 50, 14, ?  
(a) 415 (b) 430  
(c) 488 (d) 450
45. What is the name of the score a student would get if the measurements were completely accurate and error-free?  
(a) I-score (b) Neutral score  
(c) True score (d) Z-score

**Direction for questions 46 to 50:**

Read the given passage and answer the questions that follow:

A global light pollution map developed by a group of researchers has ranked New Delhi, Kolkata and Bengaluru as the three cities with the highest light pollution in India. It should serve to alert us to the looming problem of light pollution about which we are not only doing so little to prevent but are also unaware about. Light pollution refers to the harmful impact of artificial outdoor lighting. While artificial outdoor lighting is needed in the form of street lights as it increases safety on roads and enables us to study and work in the dark, its use for floodlighting, illumination, advertising, etc. has grown manifold in recent decades, resulting in the problem of light pollution. Studies show that the brightness from outdoor lights has risen steadily across India over a 20 year period, with New Delhi, Telangana, Maharashtra, Karnataka and Uttar Pradesh showing a “very high light intensity pollution” rise between 1993 and 2013.

The use of excessive artificial outdoor lighting has several harmful implications not just for human health but for the wellbeing of animals, birds, insects and our environment. Use of artificial lights at night gives us more working and studying hours but it results in the problem of ‘loss of night’. We find it difficult to fall asleep when the glow of streets enters our homes. It impacts our sleep-wake rhythm, which

could have serious implications for our moods and health. Illumination of gardens impacts animals and insects too. It is nocturnal insects and birds that suffer the most due to light pollution. It makes them disoriented, impacts their reproduction and thus, their populations.

46. Excessive hours of artificial light negatively impact our  
A. Work schedule B. Sleep cycle  
C. Study hours D. Moods and health  
Choose the correct answer from the options given below:  
(a) B and D only (b) A, B and C only  
(c) A and C only (d) A, C and D only
47. Light pollution intensity refers to:  
(a) Increased outdoor brightness during night time.  
(b) Manifold hike in use of electricity in rural areas.  
(c) More and more use of electricity in urban areas.  
(d) Use of artificial light for road safety.
48. One of the major pollutants is in the form of  
(a) Home lights  
(b) Illuminated advertising  
(c) Indoor lights  
(d) Street lights
49. The loss of night, as mentioned in the passage, will lead to  
(a) Increase in education.  
(b) More human productivity.  
(c) The altered activities of nocturnal creatures  
(d) The well-being of human population
50. The light pollution map is related to adverse effects of  
(a) Outdoor artificial light  
(b) Rural electricity projects  
(c) Sunlight  
(d) Urban electricity projects

□□□

**Answer Key**

1. (a)	2. (b)	3. (a)	4. (c)	5. (b)	6. (a)	7. (b)	8. (b)	9. (b)	10. (c)
11. (c)	12. (b)	13. (c)	14. (a)	15. (c)	16. (b)	17. (b)	18. (c)	19. (a)	20. (d)
21. (a)	22. (b)	23. (c)	24. (a)	25. (b)	26. (c)	27. (b)	28. (a)	29. (b)	30. (a)
31. (d)	32. (a)	33. (c)	34. (b)	35. (d)	36. (a)	37. (a)	38. (a)	39. (a)	40. (b)
41. (b)	42. (d)	43. (d)	44. (c)	45. (c)	46. (a)	47. (a)	48. (b)	49. (c)	50. (a)

## ANSWERS WITH EXPLANATIONS

**1. Option (a) is correct.**

Total number of employees:

In organization D = 15% of 35000 = 5,250

In organization C = 31% of 35000 = 10,850

Percentage of employees of C of D:

$$5250 \times 100/10,850 = 48.39\%$$

**2. Option (b) is correct.**

Number of employees in C = 31% of 35000 =

10,580 employees in organization C = 10,850

Ratio of employees in organization C to organization A 10,850:6300 = 217:126

**3. Option (a) is correct.**

Number of Female employees in organization

D =  $35000 \times 15/100 = 5,250$

$$5,250 \times 3/5 = 3,150$$

Number of male employees in organization E

=  $35,000 \times 31\% = 10,850$

$$10,850 \times 1/4 = 1,225$$

$$\text{Sum} = 3,150 + 1,225 = 4,375$$

**4. Option (c) is correct.**

Female in all organization

$$A = 6300 \times 7/10 = 4,410$$

$$B = 7700 \times 9/20 = 3,465$$

$$C = 10,850 \times 2/5 = 4,340$$

$$D = 5,250 \times 3/5 = 3,150$$

$$E = 4,900 \times 3/4 = 3,675$$

$$\text{Total} = 4410 + 3465 + 4340 + 3150 + 3675 = 19,040$$

**5. Option (b) is correct.**

Number of male employees in organization D

$$= 5,250 \times 2/5 = 2100$$

Number of female employees in organization B

$$= 7,700 \times 9/20 = 3465$$

$$\text{Difference between them} = 3,465 - 2100 = 1,365$$

**6. Option (a) is correct.**

Feedforward is a term used for the information provided before sending the primary message.

Brief introduction of the message is known

as introduction or abstract. To do something before sending the message is known as pre-message. Sign to convey something is known as an indicator.

**7. Option (b) is correct.**

Major term is the subject of premises, middle term is the reason for conclusion and minor term is the subject of conclusion. Minor and major term should be connected by the middle term to find the right conclusion but in the given statement's conclusion if driven by connecting the major term in the place of the middle term. This is called an error named Illicit Major.

In other words, conclusions should be driven with the middle term *i.e.*, mammals but here major term (dog) is used to conclude. This is called illicit major fallacy.

**8. Option (b) is correct.**

Let the salary of Ravi = 100

After increasing  $100 + 20 = 120$

20% increase in salary implies 20% increase in tax liability. But here tax is 10% higher on increased salary.

$$\text{Hence, Tax liability} = 20 + 10\% \text{ of } 20 = 20 + 2 = 22\%$$

**9. Option (b) is correct.**

A. Cholera	III. Ingestion of polluted water
B. Trachoma	I. Lack of water to maintain cleanliness
C. Schistosomiasis	II. Involves water contact but not ingestion
D. Dengue	IV. Requires host

**10. Option (c) is correct.**

From the total energy consumption, Portion of Non-renewable energy used in India is 63%.



Major energy source which is consumed in India is Coal energy with a portion of 56.09% of total energy consumption.

**11. Option (c) is correct.**

People use non-verbal cues more than verbal cues. Body language, gestures and many more things form non-verbal cues. Non-verbal cues are more believable than verbal cues because words can be manipulated. Hence, both the statements are false.

**12. Option (b) is correct.**

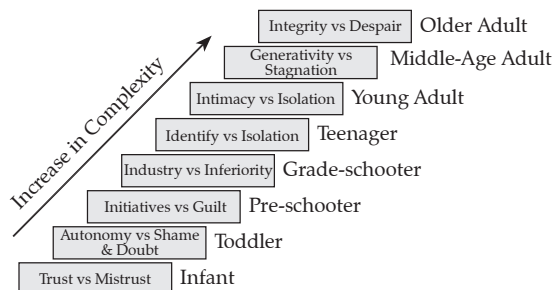
A competent communicator should be culturally neutral. Being culturally sensitive will bring biases and other barriers. He/She should be totally ethical every time, not situationally ethical.

**13. Option (c) is correct.**

BITS Pilani, Techno India University and Jaipur National University are private universities whereas Guru Nanak Dev University is a state university of Punjab.

**14. Option (a) is correct.**

**Stages of Psychsocial Development**



**15. Option (c) is correct.**

SDG-1: No poverty

SDG-2: Zero hunger

SDG-3: Good health and well being

SDG-4: Quality education

To convert humans into a capital, a country has to focus on education, health and training facilities. SDGs 1 to 4 are related to the factors which are related to the human capital formation.

**16. Option (b) is correct.**

Open learning refers to a learning method which focuses on the following:

A. Open access to learning and training provisions.

B. Making learners independent of time and place of learning.

C. Learning and evaluation with a specified curriculum.

D. Offering flexible learning opportunities to individuals and groups of learners.

**17. Option (b) is correct.**

Idealism is a philosophy which does not believe in the material world. In Rationalism, learning with the help of logic is the focus point. Pragmatism philosophy believes in solving problems in a practical way not only by theory or ideas. Conservatism promotes cultural and traditional beliefs and does not focus on changes.

**18. Option (c) is correct.**

- The Kyoto Protocol was signed in 1998-99.
- Its first commitment period was over on 31st December, 2012.
- Its second commitment period was over on 31st December, 2020.
- The Kyoto protocol was an extension of the 1992 UNFCCC.
- The aim of this protocol is to reduce greenhouse gasses.
- 5 main elements of the Kyoto protocol are: 1. Carbon dioxide, 2. Methane, 3. Nitrous Oxide, 4. Hydrofluorocarbons, 5. Sulphur Hexafluoride.

**19. Option (a) is correct.**

For statement 1: Let the principal amount be 100.

Simple interest rate = 5%

Time = 20 years

$$SI = P \times T \times R/100$$

$$100 \times 20 \times 5/100$$

Simple interest in 20 years = 100

Total amount = 100 + 100 = 200 (double of invested amount)

Hence, statement 1 is correct.

For statement 2: Let the principal amount be 100.

Rate = 20%

Time = 10 years

$$SI = P \times T \times R/100$$

$$100 \times 10 \times 20/100$$

SI = 200 (Double of the principal amount).

For statement 3:

$$P = 1000$$

$$\text{Amount} = 1331$$

$$\text{Rate} = 10\%$$

$$\text{Time} = 3 \text{ years.}$$

Formula of compound interest can be tough to calculate. This can be calculated by simple interest.

$$10\% \text{ of } 1000 = 100$$

$$\text{Amount at the end of 1st year} = 1100$$

$$\text{For 2nd year} = 1100 + 110 = 1210$$

$$\text{For 3rd year } 1210 + 121 = 1331$$

By compound interest for 3 years at the rate of 10%, the amount will be 1331. Hence, statement 3 is also correct.

**20. Option (d) is correct.**

A good computer network solution is not a barrier for any business because it makes every aspect work efficiently.

Hence, the assertion is incorrect.

**21. Option (a) is correct.**

Application software: Anti-virus

Processor: Pentium

Networking Device: Router

**22. Option (b) is correct.**

Non-Verbal communication is useful for the following:

- To get an understanding of the emotional meaning of the sender.
- For knowing behaviour to generate meaning.
- For better understanding of the message.
- It is a non-clear system of rules

Hence, only D and E are inappropriate here.

**23. Option (c) is correct.**

The AEIO syllogism can be defined as follows:

A type: statements which are universally positive. Example- All cats are red, Most of the mangoes are yellow etc.

E type: universal negative statements. Example- no man is an adult, most of the mangoes are not green etc.

I type: Particular positive statements. Example- Some M are P.

O Type: Particular negative statements. Example- some M are not P.

Relation among these statements can be designed as follows:

If 'A' is False	IV. 'E' and 'T' are Undetermined
If 'E' is True	I. 'A' and 'T' are False
If 'T' is False	III. 'E' and 'O' are True
If 'O' is True	II. 'E' is False; 'T' is True

**24. Option (a) is correct.**

Tablet computers have touch screens but do not have keyboards separately. Not having other hardware devices makes tables easily bearable.

Hence, both statements are correct but R is not elaborating or explaining A.

**25. Option (b) is correct.**

Blue ray > CD-ROM > DVD

**26. Option (c) is correct.**

Imitation is to remind something by repetition of reading like kids do at primary or elementary level. This results in the Ripple effect.

Random effect refers to the findings of uncorrelated variables. For example, while reading about the Taj Mahal, a student found some interesting variables or facts of the Mughal Empire.

Scripted effect is removing or reducing the duplications which are not necessary.

Norm effect is also called conditioning. Which means to correlate two situations.

**27. Option (b) is correct.**

A researcher who is involved in a case study method of research should not be negatively oriented; he/she should always have a positive attitude which prevents biasness. He/She should not be only appreciation oriented only. This also brings biases if we only appreciate all the things.

**28. Option (a) is correct.**

$$\text{Speed} = 54 \text{ km/h}$$

$$\text{Time} = 10 \text{ sec}$$

$$\text{Distance to be covered} = 60 + 90 = 150 \text{ m}$$

$$\text{Speed} = \text{Distance}/\text{time}$$

$$\text{Speed} = 150/10$$

$$\text{Speed} = 15 \text{ m/s}$$

To convert m/s in km/h, it will be multiplied by 3600/1000

$$15 \times 3600/1000 = 54 \text{ km/h}$$

For statement 2, it is not compulsory that the ratio of speeds of two trains will be equal to the ratio of time taken by them to cover the same distance. Hence, the statement is wrong.

29. **Option (b) is correct.**

All the given statements are correct regarding desktop computers except statement C because all desktop computers do not have inbuilt touchpads in them.

30. **Option (a) is correct.**

Providing a framework for ranking of higher educational institutions.

The major function of NIRF or National Institutional Ranking Framework is to provide a framework or standards for ranking the institutions providing higher education.

31. **Option (d) is correct.**

A. Arbitrary Scale	IV. Questions are selected on an a priori basis
B. Thurstone Scale	I. Attitude statements are decided by judges
C. Likert Scale	II. Summated ratings
D. Semantic Differential	III. Consists of seven spaces between two bipolar adjectives

32. **Option (a) is correct.**

If the speed of wind increases from 4.0 m/s to 5.0 m/s, the power output from an ideal windmill will increase by a factor of ~2.

33. **Option (c) is correct.**

In CBCS, two courses included for enhancement of ability is:

1. Ability Enhancement Compulsory Courses
2. Skill Enhancement Courses

34. **Option (b) is correct.**

Weight of the man = 75% of his weight + 39

Total weight = 100%

$39 = 100\% - 75\%$

$39 = 25\%$

Total weight =  $39/25 \times 100$

Total weight = 100% = 156 lbs

60% of his weight =  $156 \times 60/100$   
= 148 lbs

35. **Option (d) is correct.**

Viruddha fallacy is a fallacy where two contradictory things are present in one sentence.

It is a universal truth that anything that is caused or generated comes to an end at a

point of time but in the given sentence sound is eternal because it is caused by contradictory qualities.

36. **Option (a) is correct.**

The reason which are demotivating foreign students are:

- A. Lack of residential accommodation for foreign students
- B. Difficulties in recognition of international qualifications

37. **Option (a) is correct.**

A. Samanyalaksana Pratyaksa	IV. The perception of a whole class of objects through a generic property
B. JñanaLaksana Pratyaksa	III. Perception of an object which is in contact with sense through previous knowledge of itself
C. YogajPratyaksa	I. Intuitive perception of all objects- past, distant and future due to supernormal powers generated by meditation
D. AlaukikaPratyaksa	II. When objects are not actually present to sense but are conveyed to it through a special medium

38. **Option (a) is correct.**

In every interaction a message is sent and a message is received which is called a two-way communication process. Sender's body language, gesture and many non-verbal communication convey many other messages too which are understood by the receiver. Hence, statement I is correct.

For security purposes, parents should be encouraged to keep computers in a place where everyone can have access to it so that the children don't fall victims of cyber-bullying. Hence, statement II is incorrect.

**39. Option (a) is correct.**

Media kits refers to a package of information, assembled by a company to provide basic information about itself to the reporters.

**40. Option (b) is correct.**

Qualitative research is not objective but subjective as it consists of various aspects which are totally based on perceptions and assumptions of the researcher. Hence, statement I is incorrect.

Qualitative research has lower chances of being generalized because it consists of subjectivity and depends on beliefs of the researcher. Hence, statement I is correct.

**41. Option (b) is correct.**

Following are the components which needs to be possibly included in the framework to evaluate the learning process:

- (a) Confidence level
- (b) Frame blindness
- (c) Reliability of the framework
- (d) Valid results measurement capacity of the framework
- (e) Taking shortcuts

**42. Option (d) is correct.**

Following are the techniques which are used in qualitative research:

- (a) Holsti's constant
- (b) Chronbach's alpha

**43. Option (d) is correct.**

Pratijña, Hetu, Udaharana, Upanaya, Nigamana

Following is the process of inference (Anumana)  
This process can be learnt by mnemonic PHUUN.

Pratijna (the subject of inference): The hill has fire

Hetu (the reason): Because it has smoke

Udaharana (the example): Kitchen has smoke because it has fire.

Upnayan (comparison): And kitchen has smoke because of fire that is as hill has fire because of smoke.

Nigmana (the conclusion): Hill has fire.

**44. Option (c) is correct.**

5, 12, 23, 50, 141, ?

$$12 - 5 = 7$$

$$23 - 12 = 11$$

$$50 - 23 = 27$$

$$141 - 50 = 91$$

$$11 - 7 = 4$$

$$27 - 11 = 16$$

$$91 - 27 = 64$$

(Numbers are in multiple of 4)

$$(4 \times 1 = 4, 4 \times 4 = 16, 4 \times 16 = 64)$$

Next term can be get as follows:-

$$64 \times 4 = 256$$

$$256 + 91 = 347$$

$$347 + 141 = 488$$

**45. Option (c) is correct.**

If the measurements are completely accurate and error free, this type of score measurement scale is called true score.

**46. Option (a) is correct.**

According to the passage, excessive hours of artificial light negatively affect our sleep cycle, moods and health.

**47. Option (a) is correct.**

According to the passage, excess or increased outdoor light during night time which has no use is called light pollution intensity.

**48. Option (b) is correct.**

Illuminated advertising is one of the major pollutants as per the passage suggests.

**49. Option (c) is correct.**

The loss of night, as mentioned in the passage, leads to the altered activities of the nocturnal creatures.

**50. Option (a) is correct.**

As mentioned in the passage, the light pollution map is related to the adverse effects of outdoor artificial light.



# UGC NET PAPER-1

## GENERAL APTITUDE

# Sample Question Paper-2

Time Allotted: 1 Hour

Maximum Marks: 100

### Important Instructions:

- Each question carries 2 marks.
- This paper consists of fifty (50) multiple-choice type of questions.
- Each item has four alternative responses marked (a), (b), (c) and (d). You have to darken the oval as indicated below on the correct response against each item.  
**Example:** where (c) is the correct response.
- Your responses to the items are to be indicated in the **Answer Sheet**.
- Use of any calculator or log table etc., is prohibited.**
- Negative Marking: For each incorrect answer 0.5 marks shall be deducted.**

### Direction for questions 1 to 5:

Read the given passage and answer the questions that follow.

The following table has the number of enrolled students for a particular course and year.

Total number of seats is given in brackets with respect to each course.

Year	Number of Enrolled Students			
	B.Tech. (120)	M.Tech. (30)	M.Phil. (20)	MBA (60)
2016	96	24	12	52
2017	110	26	14	57
2018	108	25	13	54
2019	112	28	15	56
2020	104	27	16	48

- Which of the following year has maximum vacant seats?  
(a) 2016 (b) 2017  
(c) 2018 (d) 2019
- Find out the difference between the average vacant seats of MBA and M.Phil. for 2016-2020.  
(a) 6 (b) 6.6  
(c) 0.6 (d) 4.6
- Which of the following years has the lowest enrollments?  
(a) 2017 (b) 2018  
(c) 2019 (d) 2020
- Which course has the highest enrollment percentage from 2016 to 2017?  
(a) B.Tech. (b) M.Phil.  
(c) MBA (d) M.Tech.

- What is the average number of non-vacant seats of MBA between 2016-2020?  
(a) 6.6 (b) 6.667  
(c) 53.4 (d) 54.3
- The NEP-2020 envisions higher education as:  
A. playing an important role in promoting human as well as societal well-being  
B. enabling system for personal accomplishments with no economic contribution to society or public engagement  
C. a system with less emphasis on development of cognitive skills and achieving learning outcomes  
D. a system with identified sets of skills and values to be incorporated at each stage of learning from pre-school to higher education  
E. a system which needs complete overhaul and energizing to overcome the challenges faced by the system

Choose the correct answer from the options given below:

- (a) A, B and C only (b) A, D and E only  
(c) B, C and D only (d) C, D and E only
- Match List I with List II.

List I	List II
A. Central Institute of English and Foreign languages	I. Chitrakoot
B. Gramodaya Vishwa Vidyalaya	II. Hyderabad

C. Central Institute of Tibetan Studies	III. Bengaluru
D. Indian Institute of Science	IV. Dharamshala

Choose the correct answer from the options given below:

- (a) A - I, B - III, C - IV, D - II  
 (b) A - II, B - I, C - IV, D - III  
 (c) A - III, B - IV, C - II, D - I  
 (d) A - IV, B - I, C - II, D - II

8. Match List I with List II.

List I Security threats	List II Meaning
A. Hacking	I. 'Clog-up' a user's inbox with unwanted emails
B. Phishing	II. Gives the originator access to all data entered by the keyboard
C. Spyware	III. Identity fraud
D. Spam	IV. Illegal use of personal data

- (a) A - I, B - III, C - II, D - IV  
 (b) A - II, B - IV, C - III, D - I  
 (c) A - IV, B - I, C - III, D - II  
 (d) A - IV, B - III, C - II, D - I

9. Grapevine is a type of:

- (a) Formal communication  
 (b) Informal communication  
 (c) Intrapersonal communication  
 (d) Interpersonal communication

10. Intrapersonal communication refers to:

- (a) Communication done by self to boost up confidence level  
 (b) Interaction with a large group  
 (c) Interacting with a person on telephone or letter correspondence  
 (d) Talking with friends

11. Qualitative research is usually \_\_\_\_\_ whereas quantitative research is usually \_\_\_\_\_.

- (a) structured, unstructured  
 (b) unstructured, structured  
 (c) inductive, deductive  
 (d) deductive, inductive

12. Which of the following are the objectives of National Knowledge Commission?

- Build quality in Indian education system
- To gain advantages of modern education
- To get competitive advantages in field of knowledge in 21st century
- To get achievements by Indian education system by Indian students

Choose the correct code from the following:

- (a) 1, 2 and 3                      (b) 1 and 3 only  
 (c) 1, 2, 3 and 4                (d) 1 and 4 only

13. Which of the following statements are/is incorrect?

- (a) The average of the first 6 multiples of 8 is 78.  
 (b) There are 34 prime numbers between 10 and 100.  
 (c) A principle will be doubled in 15 years at the interest rate of 10%.

Choose the correct code:

- (a) A and B only                (b) A and C only  
 (c) A, B and C                 (d) C and B only

14. Given below are two statements:

**Statement I:** The single discount equivalent to a series discount of 10%, 30% and 50% is 65.5%.

**Statement II:** The single discount equivalent to a series discount of 10%, 20% and 30% is 43.2%.

In light of the above statements, choose the correct answer from the options given below.

- (a) Both statements are correct.  
 (b) Both statements are incorrect.  
 (c) Statement I is correct but statement II is incorrect.  
 (d) Statement II is correct but statement I is incorrect.

15.

Hazardous waste	Characteristic feature
A. Ignitable	I. Very unstable under normal conditions
B. Corrosive	II. Catches fire under some conditions
C. Reactive	III. Harmful when absorbed
D. Toxic	IV. Very high PH value (25 or more)

Select the correct code from the following options:

- (a) A - III, B - IV, C - I, D - III  
 (b) A - II, B - IV, C - I, D - III  
 (c) A - II, B - IV, C - III, D - I  
 (d) A - III, B - I, C - IV, D - III

16. Which of the following statements are correct?

- A. A proposition and E proposition are contradictories

- B. A proposition and O proposition are contradictories
- C. E proposition and O proposition are contradictories
- D. I proposition and O proposition are contraries
- E. I proposition and O proposition are subcontraries

Choose the correct answer from the options given below:

- (a) A, C and D                      (b) A, D and E
- (c) B and D only                    (d) B and E only

17. David Ausubel is associated with:
- (a) Theory of meaningful verbal learning
  - (b) Theory of enforcement
  - (c) Classical learning theories
  - (d) Stimulus response theory bond
18. Given below are two statements, one is labeled as Assertion (A) and the other is labeled as Reason (R).
- Assertion (A):** Classroom communication is completely based on teachers' ability to manage the class.
- Reason (R):** An active interaction between teachers and students helps in learning.
- In light of the above statements, choose the correct answer from the options given below.
- (a) A is false but R is true.
  - (b) A is true but R is false.
  - (c) Both A and R are true and R is the correct explanation of A.
  - (d) Both A and R are true but R is NOT the correct explanation of A.

19.

ICT initiatives	Purpose
A. E-Pathshala	I. Repository of theses and dissertations
B. ShodhGanga	II. Digital repository of learning resources developed by ODL
C. Shodhgangotri	III. Synopsis of research topic submitted to the universities in India by research scholars
D. E-Gyankosh	IV. Educational e-resources developed by NCERT in 2015

Choose the correct option from the below:

- (a) A - IV, B - I, C - III, D - I
- (b) A - I, B - IV, C - III, D - II

- (c) A - IV, B - III, C - I, D - II
- (d) A - IV, B - I, C - II, D - III

20. NVivo is a software which helps to analyze:
- (a) Qualitative data
  - (b) Quantitative data
  - (c) Correlational research
  - (d) Descriptive research
21. Which of the following statements are correct?
- Statement I:** Macaulay gave emphasis on English education rather than Indian Education.
- Statement II:** The Wood's Despatch recognised for the first time that the government should give frank and cordial support to female education and take effective measures for its expansion.
- Statement III:** Macaulay gave the theory of filtration.
- (a) A, B and C only                      (b) A and B only
  - (c) A and C only                        (d) B and C only
22. Which of the following statements is/are true about the data bus?
- Statement I:** This is a set of wires or connections.
- Statement II:** This transports data within a computer or device.
- Statement III:** It is a data centric software framework.
- Choose the correct answer from the options given below:
- (a) All statements are correct.
  - (b) All statements are incorrect.
  - (c) Only A and C are correct.
  - (d) Only C and B are correct.
23. Given below are two statements:
- Statement I:** As per Piaget's stages of cognitive development, the child learns a language and begins to use symbols to represent objects during the pre-operational stage.
- Statement II:** As per Piaget's stages of cognitive development, the child learns through reflexes, senses and movement-actions on the environment during the formal operational stage.
- In light of the above statements, choose the correct answer from the options given below.
- (a) Both statements are correct.
  - (b) Both statements are incorrect.
  - (c) Statement I is correct but statement II is incorrect.
  - (d) Statement II is correct but statement I is incorrect.
24. Which of the following areas are covered in research, development and management by AICTE?

- A. Hotel management
- B. Town planning
- C. Pharmacy
- D. Applied arts and science
- E. Engineering
- F. Commerce and trade
- G. Education

Choose the correct code from the options given below.

- (a) A, B, C, D and E
- (b) A, B, C, D, E, F and G
- (c) A, C, D and F only
- (d) A, D, and E only

25. Effective teaching is a function of
- (a) Teacher's skills
  - (b) Teacher's skills and knowledge
  - (c) Teacher's skills, knowledge and student interactions
  - (d) Active participation of the students

**Direction for questions 26 to 30:**

Read the given passage and answer the questions that follow.

Most of the people who appear most often and most gloriously in the history books are great conquerors, generals and soldiers, whereas the people who really helped civilization forward are often never mentioned at all. We do not know who first set a broken leg, or launched a seaworthy boat, or calculated the length of the year, or manured a field, but we all know all about the killers and destroyers. People think a great deal of them, so much so that on all the highest pillars in the great cities of the world you will find the figure of a conqueror or a general or a soldier. Most people believe that the greatest countries are those that have beaten in battle, the greatest number of other countries and ruled over them as conquerors. It is just possible they are, but they are not the most civilized. Animals fight; so, do savages; hence to be good at fighting is to be good in the way in which an animal or a savage is good, but it is not to be civilized. Even being good at getting other people to fight for you and telling them how to do it most efficiently- this, after all, is what conquerors and generals have done-is not being civilized. People fight to settle quarrels. Fighting means killing and civilized people ought to be able to find some way of settling their disputes other than by seeing which side can kill off the greater number of the other side and then saying that, that side which has killed most has won. And not only has won, but because it has won, has been in

the right. For that is what going to war means; it means saying that might is right.

26. "That is what going to war means;" it means:
- (a) in a war only those who are powerful will win.
  - (b) only those who are powerful should go to war.
  - (c) the winner is right and the loser wrong.
  - (d) those who are right should fight against those who are wrong.
27. Most people believe that the greatest countries are:
- (a) those that built the highest pillars.
  - (b) those that defeated a few countries.
  - (c) those that were beaten in battle by the greatest number of other countries.
  - (d) those that won the greatest number of battles against other countries.
28. In the author's opinion, the countries that ruled over a large number of other countries are:
- (a) certainly not the greatest in any way.
  - (b) neither the greatest nor the most civilized.
  - (c) possibly the greatest in some sense but not the most civilized.
  - (d) possibly the most civilized but not the greatest.
29. On all the highest pillars in the great cities of the world, we find:
- (a) a figure representing the number of conquerors, generals and soldiers in that country.
  - (b) the figure of a person who helped the civilization forward.
  - (c) the figure of some conqueror or general or soldier.
  - (d) the figure of the same conqueror or general or soldier.
30. In the first sentence, the author says that:
- (a) conquerors, generals and soldiers should not be mentioned in history.
  - (b) history books tell us far more about conquerors and soldiers than about those who helped civilization forward.
  - (c) most history books were written by conquerors, generals and soldiers.
  - (d) no one who really helped civilization forward is mentioned in any history book
31. Criteria reference testing refers to:
- (a) Based on some predefined standards, assessment of the students how well he/she has performed
  - (b) Criteria remedial assessment
  - (c) Checking references before selection for a job
  - (d) Standardization



32. Which of the following statements are correct regarding Anaerobic digestion of sewage sludge?

1. It is a fast process.
2. Last product of this process is Methane.
3. This process will reduce the quantity of the mixture and will get dewatered easily.
4. It does not require large size reactors.

Choose the correct code from the following options:

- (a) 1 and 4 only
- (b) 2 and 3 only
- (c) 1, 2 and 3 only
- (d) All statements are correct.

33. The Latin words 'Communis' or 'Communicare' from which the term 'Communication has been derived, means:

- (a) Make common, the information available
- (b) Make something uncommon
- (c) Produce information
- (d) Provide specific information

34. 21, 35, 56, 91, 154, ?

- (a) 273
- (b) 289
- (c) 231
- (d) 240

35. WYB, XUD, YQE, \_\_\_\_

- (a) HYM
- (b) HCZ
- (c) ZMH
- (d) EGN

36. "A young child goes near an iron ball, feels the radiation of heat; from that she concludes that the ball must be quite hot and returns without physically touching the ball."

Here the cognition is through:

- (a) Anumana
- (b) Pratyaksha
- (c) Anupalabdhi
- (d) Shabsha

37. A type of malicious code or software that looks legitimate but can take control of your computer is:

- (a) Worms
- (b) Ransomware
- (c) Computer virus
- (d) Trojan horse

38.

Sustainable development goal number	Goal
A. SDG 7	I. Decent work and economic growth
B. SDG 17	II. Partnerships for the goals
C. SDG 8	III. Gender equality and women empowerment
D. SDG 5	IV. Affordable and clean energy

Choose the correct code from the following options:

- (a) A - III, B - II, C - I, D - IV
- (b) A - IV, B - II, C - I, D - III
- (c) A - IV, B - III, C - II, D - I
- (d) A - I, B - II, C - IV, D - III

39. Hill has fire because it has smoke as it is in the kitchen. Here, smoke is:

- (a) Paksh
- (b) Upanayana
- (c) Hetu
- (d) Nigmana

40. Having different languages of sender and receiver is which type of barrier in effective communication:

- (a) Physical barrier
- (b) Linguistic barrier
- (c) Physiological barriers
- (d) Emotional barrier

41. Admission program of ancient buddhist education for higher level is called:

- (a) Prabajja sanskar
- (b) Upasampada
- (c) Vassa
- (d) Upanayana

42. Consider the following sentences:

**Statement I:** Being valid or invalid is the quality of statements.

**Statement II:** Being true or false is a quality of argument.

Select the correct option:

- (a) Both statements are correct.
- (b) Both statements are incorrect.
- (c) Statement I is correct but statement II is incorrect.
- (d) Statement II is correct but statement I is incorrect.

43. A sum of money placed at simple interest doubles itself in 4 years. Find the interest rate.

- (a) 25%
- (b) 20%
- (c) 35%
- (d) 24%

44. Find the right process of action research.

- (a) Plan, Act, Observe, Reflect
- (b) Plan, Observe, Reflect, Act
- (c) Reflect, Plan, Act, Observe
- (d) Plan, Observe, Act, Reflect

45. Consider the following statements:

**Statement A:** Reliable research is always valid.

**Statement B:** Valid research is always reliable.

**Statement C:** Reliability means same results every time.

**Statement D:** Validity refers to research that is legal.

**Statement E:** Every research has quantitative data.

Find the correct option.

- (a) A, B, C and D      (b) B and C only  
(c) A, C and E      (d) A, B, C, D and E

46. Find the correct sentence(s) from the following:

**Statement I:** Type one error is caused when the true null hypothesis is rejected.

**Statement II:** Type two error refers to when a false null hypothesis is accepted.

- (a) Both statements are correct.  
(b) Both statements are incorrect.  
(c) Statement I is correct but statement II is incorrect.  
(d) Statement I is incorrect but statement II is correct.

47. Which of the following statements are true about the first ever digital budget of India?

- It is the budget of financial year 2021-22.
- It has six pillars for growth and development of India.
- It has various new initiatives for the education system in India like Central University in Leh and 100 more Sainik Schools.
- It was presented in the Rajya Sabha by the honourable Finance Minister.

Select the correct code from the options given below:

- (a) 1, 2 and 3      (b) 1, 2, 3 and 4

- (c) 1 and 4 only      (d) 1 and 3 only

48. Consider the following statements regarding IMPRINT:

- This stands for Impacting Research Innovation and Technology.
- It is a joint initiative of IIT and IISc.
- This is related to engineering education only.
- 142 IMPRINT supported projects have been launched till yet.

Select the correct code from the options given below.

- (a) 1, 2 and 3 only      (b) 1 and 4 only  
(c) 1, 2, 3 and 4      (d) 1, 2 and 4

49. 'Project file.docx' is a computer file of which format?

- (a) MS word      (b) MS PowerPoint  
(c) Google sheets  
(d) Windows document

50. **Statement 1:** Vidyadaan 2.0 was launched on DIKSHA platform.

**Statement 2:** Vidyadaan is an initiative to contribute e-learning resources for school education as well as higher education.

- (a) Both statements are correct.  
(b) Both statements are incorrect.  
(c) Only statement 1 is correct.  
(d) Only statement 2 is correct.

□□□

### Answer Key

1. (a)	2. (c)	3. (d)	4. (b)	5. (c)	6. (b)	7. (b)	8. (d)	9. (b)	10. (a)
11. (b)	12. (b)	13. (c)	14. (b)	15. (b)	16. (d)	17. (a)	18. (a)	19. (b)	20. (a)
21. (a)	22. (a)	23. (a)	24. (a)	25. (c)	26. (d)	27. (d)	28. (c)	29. (c)	30. (b)
31. (a)	32. (b)	33. (a)	34. (a)	35. (c)	36. (b)	37. (d)	38. (b)	39. (c)	40. (b)
41. (b)	42. (b)	43. (a)	44. (a)	45. (b)	46. (a)	47. (a)	48. (d)	49. (a)	50. (a)

# UGC NET PAPER-1

# GENERAL APTITUDE

# Sample Question Paper-2

## ANSWERS WITH EXPLANATIONS

**1. Option (a) is correct.**

Number of vacant seats:

$$2016 = 24 + 6 + 8 + 8 = 46$$

$$2017 = 10 + 4 + 6 + 3 = 23$$

$$2018 = 12 + 5 + 7 + 6 = 30$$

$$2019 = 16 + 3 + 4 + 12 = 19$$

Hence, maximum vacant seats from the given years are in 2016.

**2. Option (c) is correct.**

Vacant seats in:

$$\text{MBA} - 2016 = 8$$

$$2017 = 3$$

$$2018 = 6$$

$$2019 = 4$$

$$2020 = 12$$

$$\text{Average vacant seats in MBA} = 8 + 3 + 6 + 4 + 12 / 5 = 6.6$$

$$\text{M.Phil.} - 2016 = 8$$

$$2017 = 6$$

$$2018 = 7$$

$$2019 = 5$$

$$2020 = 4$$

$$\text{Average vacant seats} = 8 + 6 + 7 + 5 + 4 / 5 = 6$$

$$\text{Difference of average vacant seats of MBA and M.Phil.} = 6.6 - 6 = 0.6$$

**3. Option (d) is correct.**

Enrollments:

$$2017 = 110 + 26 + 14 + 57 = 207$$

$$2018 = 108 + 25 + 13 + 54 = 200$$

$$2019 = 112 + 28 + 15 + 56 = 211$$

$$2020 = 104 + 27 + 16 + 48 = 195$$

Hence, 2020 has the lowest enrollments among the given options.

**4. Option (b) is correct.**

Enrollments	B.Tech.	M.Phil.	MBA	M.Tech.
2016	96	12	52	24
2017	110	14	57	26
Difference	14	2	5	2
Percentage change	$14 \times 100/96$	$2 \times 100/12$	$5 \times 100/52$	$2 \times 100/24$
Percentage change	14.58%	16.67%	9.62%	8.33%

Highest percentage change in enrollments between 2016-17 is in the course M.Phil.

**5. Option (c) is correct.**

Non-Vacant (Admissions) seats of MBA:

$$2016 = 52$$

$$2017 = 57$$

$$2018 = 54$$

$$2019 = 56$$

$$2020 = 48$$

$$\text{Average of non-vacant seats} = 52 + 57 + 54 + 56 + 48 / 5 = 53.4$$

**6. Option (b) is correct.**

New Education Policy of 2020 or NEP 2020 has following key points for higher education:

1. Quality universities and colleges
2. Making the students a human as well as a social well-being
3. Social, professional and economical contribution to the country
4. Increasing enrollment ratio
5. Catalyzing quality academic research through a new National Research Foundation
6. Value education
7. Vocational and professional education
8. Quality teaching through teacher education and training

9. Changing regulatory system of higher education

7. **Option (b) is correct.**

A. Central Institute of English and Foreign Languages	II. Hyderabad
B. Gramodaya Vishwa Vidyalaya	I. Chittrakoot
C. Central Institute of Tibetan Studies	IV. Dharamshala
D. Indian Institute of Science	III. Bengaluru

8. **Option (d) is correct.**

List I Security threats	List II Meaning
A. Hacking	IV. Illegal use of personal data
B. Phishing	III. Identity fraud
C. Spyware	II. Gives the originator access to all data entered by the keyboard
D. Spam	I. 'Clog-up' a user's inbox with unwanted emails

9. **Option (b) is correct.**

Grapevine communication is a type of informal communication. This includes informal, unofficial and quick communication among the employees working in the same organization. This may in the form of gossip, rumor, etc.

10. **Option (a) is correct.**

Intrapersonal communication refers to the conversation or communication which a person does with himself/herself. This can be done with the purpose of practicing dialogs, presentation practice, increasing communication skills, boosting confidence, deciding or comparing some things etc.

11. **Option (b) is correct.**

Qualitative research is the research which is usually used in social science or descriptive research. These types of researchers usually collect data with surveys and such kinds of means. Thus, it is not possible to decide everything before starting. So, qualitative research designs are commonly of unstructured nature.

On the other hand, quantitative data research is usually structured in nature.

12. **Option (b) is correct.**

National Knowledge Commission or NKC was constituted on 13th June, 2005 with the object of improving by considering possible improvement policies for the higher education system of India. NKC is the Think-tank of India for preparing proposals of higher education policies for taking advantage in the knowledge intensive service sectors.

Following are the objectives of NKC:

1. Build quality in Indian education system
2. To get competitive advantages in field of knowledge of 21st century
3. Radical improvement in existing systems of knowledge
4. Creating avenues for generating new forms of knowledge

13. **Option (c) is correct.**

**Statement 1:** First 6 multiples of 8 are = 8, 16, 24, 32, 40, 48.

$$\text{Average} = 8 + 16 + 24 + 32 + 40 + 48 / 6 = 28$$

Hence, statement 1 is incorrect.

**Statement 2:** There are 25 prime numbers between 10 and 100. Hence, statement 2 is incorrect.

**Statement 3:** Let the principle amount be 100

$$\text{Simple interest} = 100 \times 15 \times 10 / 100 = 150$$

Amount after 15 years = 150 + 100 = 250 (more than double). Hence, statement 3 is incorrect.

14. **Option (b) is correct.**

**Statement 1:** Let the MRP be 100

$$\text{After first discount} = 100 - 10\% = 90$$

$$\text{After second discount} = 90 - 30\% = 63$$

$$\text{After final discount} = 63 - 50\% = 31.5$$

$$\text{Total or total equivalent discount} = 100 - 31.5 = 68.5\%$$

Hence, statement 1 is incorrect.

**Statement 2:** Let the MRP be 100

$$\text{After first discount} = 100 - 10\% = 90$$

$$\text{After second discount} = 90 - 20\% = 72$$

$$\text{After third and final discount} = 72 - 30\% = 50.4$$

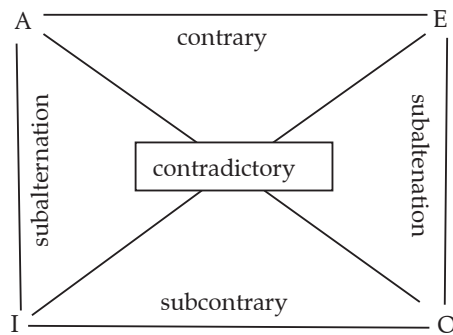
$$\text{Total discount} = 100 - 50.4 = 49.6$$

Hence, statement 2 is also incorrect.

15. Option (b) is correct.

Hazardous waste	Characteristic feature
A. Ignitable	II. Catches fire under some conditions
B. Corrosive	IV. Very high PH value (25 or more)
C. Reactive	I. Very unstable under normal conditions
D. Toxic	III. Harmful when absorbed

16. Option (d) is correct.



With reference to the image, only statements B and D are correct.

Following can be understood by the image:

1. A and E are contrary.
2. E and O are sub alternation.
3. A and I are sub alternation.
4. I and O are subcontrary.
5. A and O are contradictory.
6. I and E are contradictory.

17. Option (a) is correct.

David Ausubel is associated with the theory of meaningful verbal learning.

This theory emphasizes that before delivering a new knowledge to the student, previous knowledge should be connected and recalled. Cognitive ability of the students should be strengthened by verbal delivery of knowledge which is more effectively presented and learnt.

18. Option (a) is correct.

Classroom communication is not the only function of the ability of the teacher. It depends on various factors like student interaction, teaching methodology, physical environment etc. Hence, the assertion is not correct.

19. Option (b) is correct.

ICT initiatives	Purpose
A. E-Pathshala	IV. Educational e-resources developed by NCERT in 2015
B. ShodhGanga	I. Repository of theses and dissertations
C. Shodhgangotri	III. Synopsis of research topic submitted to the universities in India by research scholars
D. E-Gyankosh	II. Digital repository of learning resources developed by ODL

20. Option (a) is correct.

NVivo is a well-known software which is used to analyze qualitative data. It includes various non parametric tests which make analyzing very quick, accurate and easy.

21. Option (a) is correct.

Macaulay came to India in 1835 to recommend a policy on how to spend the budget of one lac which was allotted by the present government for education in India.

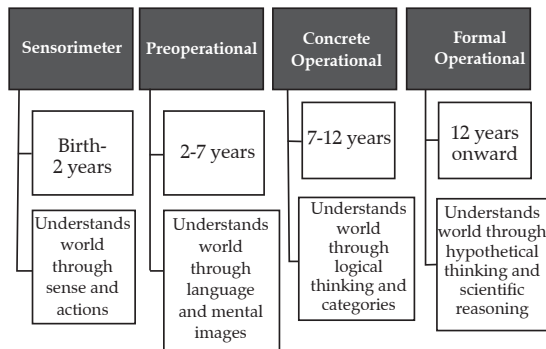
He believed that English literature was great and Hindi and Sanskrit literature was worthless. He gave a theory of filtration which says that only some people should be educated and other people will become educated by these people. Education and knowledge will get filtered and reach the common people.

Wood's Report came after Macaulay' Minutes of 1835. In 1854, it gave emphasis on Hindi as well as English education and gave support to women's education and teachers' training as well.

Hence, all statements are correct.

22. Option (a) is correct.

Data bus is a data centric software which consists of various wires or connections which is used for transformation of data within the computer network.

**23. Option (a) is correct.**

As per Piaget's stages of cognitive development, a child learns a language and begins to use symbols to represent objects during the pre-operational stage. As per Piaget's stages of cognitive development, a child learns through reflexes, senses and movement-actions on the environment during the formal operational stage.

**24. Option (a) is correct.**

AICTE or All India Council for Technical Council covers standards and various aspects of the following areas of education or technical education course:

1. Engineering
2. Town planning
3. Pharmacy
4. Management
5. Architecture
6. Hotel management
7. Technology
8. Catering technology

**25. Option (c) is correct.**

Effective learning or effective teaching depends on the skills of the teacher to make an active and interactive classroom environment. This gets affected by the physical environment as well. For making the teaching effective and learning permanent, a teacher must try to make their students participate as much as he/she can because learning by doing or by connecting with normal life makes learning long lasting and permanent.

**26. Option (d) is correct.**

In the last line of the last paragraph, the author has mentioned the real meaning as to how a war should be. According to the author, a war should be on the basis of right and wrong things, not on the basis of hate and feelings of the enemy.

**27. Option (d) is correct.**

Those who won the greatest number of battles against other countries.

According to the given passage, people believe that those countries who have won most wars against other countries are the greatest countries.

**28. Option (c) is correct.**

Possibly the greatest in some sense but not the most civilized.

As per the given passage, the author says that winning most of the wars does not make a country the most civilized one. They may be the greatest in some ways but not the most civilized.

**29. Option (c) is correct.**

The figure of some conqueror or general or soldier.

According to the given passage, in all the great countries of the world statues of some conqueror, general or soldier can be found who found for their countries.

**30. Option (b) is correct.**

History books tell us far more about conquerors and soldiers than about those who helped civilization forward.

In the given passage, in the first line, the author says, "most gloriously in the history books are great conquerors, generals and soldiers, whereas the people who really helped civilization forward are often never mentioned at all."

**31. Option (a) is correct.**

Based on some predefined standards, assessment of the students how well he/she performed.

Criteria based tests are based on some criteria or standards which are predefined. These types of tests are usually used for shortlisting candidates for various purposes but also used in academic courses for practice or to reach predefined benchmarks.

**32. Option (b) is correct.**

Anaerobic digestion of sewage sludge is a process of sewage treatment and a widely used method for the same.

- It is a slow process.
- It gives methane as its last product.
- As it is a slow process, it requires large size reactors.

- This process reduces the quantity of the mixture as it degrades impurities.

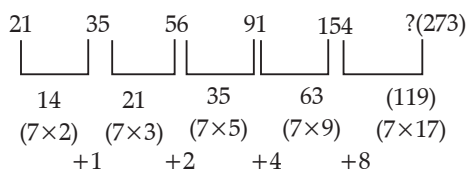
**33. Option (a) is correct.**

The word communication is derived from Latin words- 'communis' or 'communicare' which means to make the information available to all or to make it common.

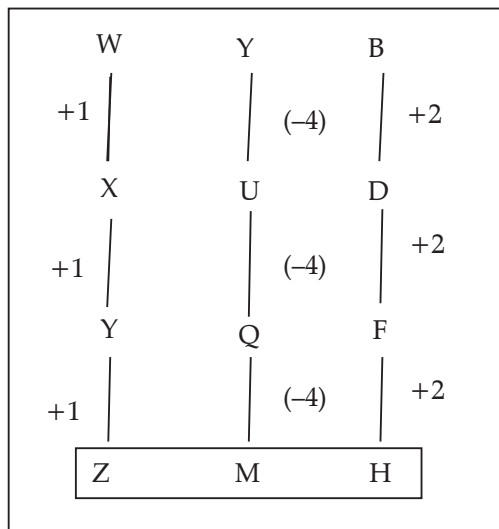
The major characteristics of communication are:

1. This is a two-way process.
2. It is done for mutual understandings.
3. It is a continuous process.
4. It is required everywhere and at all levels.
5. Sender and receiver must have a common language whether verbal or non-verbal.
6. It can also be conducted through gestures.
7. Meeting of minds are necessary.
8. Exchange of ideas are based of complementary and symmetry.
9. It always has a context.
10. It includes encoding and decoding.

**34. Option (a) is correct.**



**35. Option (c) is correct.**



**36. Option (b) is correct.**

Pratyaksha is the means of knowledge acquired with senses or directly. If a young child feels the heat and concludes that the object is hot, here the cognition is through pratyaksha.

Anumana or inference is to connect the present condition with the previous knowledge. Example: A person after seeing smoke on a hill, a person concludes that the hill has fire on the basis of fire and smoke seen by him in the kitchen of his house.

Anupalabdhi is to get knowledge in the absence of anyone or anything. Example: There is no jar on the ground, means there was a jar earlier on the ground.

Shabda: Shabda or verbal is to get knowledge with the means of words.

**37. Option (d) is correct.**

Trojan Horse is a type of malicious code or software that looks legitimate but can control a computer system.

**38. Option (b) is correct.**

Sustainable development goal number	Goal
(a) SDG 7	IV. Affordable and clean energy
(b) SDG 17	II. Partnerships for the goals
(c) SDG 8	I. Decent work and economic growth
(d) SDG 5	III. Gender equality and women empowerment

SDG goals stands for sustainable development goals which were accepted for sustainable environmental development with contribution of all the countries of the world. These were adopted in UN Sustainable Development Summit on the completion of MDGs in 2015 and aimed at achievements for 2030. Hence, these are called '2030 Agenda'.

**39. Option (c) is correct.**

In the sentence-Hill has fire because it has smoke as it is in kitchen, Smoke is the Hetu or the reason,

**40. Option (b) is correct.**

Communication barrier which gets created due to difference in languages is called the linguistic barrier.

Physical barrier refers to the barriers caused due to the physical environment, such as low voice of teacher in the class, noise coming from outside the class etc.

Psychological barriers are barriers caused due to psychological factors like anger, sadness, demotivation etc.

**41. Option (b) is correct.**

Admission in higher education in the Buddhist education system is called Upasampada.

Upnayan sanskar was the process or rituals of beginning of education for a child.

**42. Option (b) is correct.**

Statement is tested true or false and being valid and invalid is a feature of argument. Given sentences are written with the opposite qualities. Hence, both the statements are wrong.

**43. Option (a) is correct.**

Let the principal amount be 100

rate =  $x$

time = 4 years

Simple interest = 100 (same as the principal because amount will be doubled)

$SI = \frac{PRT}{100}$

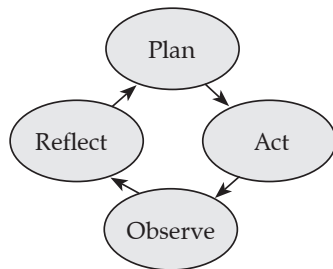
$100 = 100 \times 4 \times x/100$

$4x = 100$

$r = 25\%$

**44. Option (a) is correct.**

Action research is a sub-part of applied research which is solution oriented. This is done for an immediate solution and is cyclic in nature. Process of action research is



**45. Option (b) is correct.**

- Reliability may or may not have validity but validity always has reliability.
- Reliability means same results every time
- Validity means right results every time.

**46. Option (a) is correct.**

Type I error or alpha error is the error when we reject the true null hypothesis.

Type II error or beta error is when we accept the false null hypothesis.

**47. Option (a) is correct.**

Financial budget of 2021-22 was India's first digital budget which was presented in the Lok Sabha by the honourable Finance Minister Mrs. Nirmala Sitharaman.

It has various new and digital initiatives for the higher education system and other levels of education as well.

**48. Option (d) is correct.**

IMPRINT stands for Impacting Research Innovation and Technology. It is a joint initiative of IIT and IIS for motivating research and development in the field of technologies, engineering and science. Till yet, 142 supportive projects of IMPRINT have been launched.

**49. Option (a) is correct.**

.docx - Word file

.ppt - PowerPoint file

.pdf - pdf file

.xlsx - excel file

**50. Option (a) is correct.**

Vidyadaan 2.0 was launched by DIKSHA platform and is a type of digital initiative for education. This aimed at providing e-resources for learning of the school level as well as of high-level courses.