CAT SAMPLE QUESTION PAPER 1

Time Allowed : 2 Hours	Maximum Marks: 198

Important Instructions :

1. The test has three sections. It contains 66 questions in all comprising the following three parts:

   Section I – VARC (Verbal Ability & Reading Comprehension) – 24 Questions

   Section II – DILR (Data Interpretation & Logical Reasoning) – 20 Questions

   Section III – QA (Quantitative Ability) – 22 Questions

2. The total duration of the test is 120 minutes.

3. The time allotted to each section is 40 minutes. As soon as you start answering a section, the clock (displayed on the top right corner of the screen) starts. On the completion of 40 minutes, the clock stops, the particular section is locked and the responses to the section are auto-submitted. You then need to move to the next section and start answering the next set of questions. The same process is repeated for all three sections. On submission of all three sections, a summary of your answers is displayed on your screen.

4. The question paper has a mix of Multiple Choice Question (MCQ) type with options and non-MCQ type. For non-MCQ type questions you need to type the answer using the virtual number-board while filling E-OMR.

5. There is only one correct answer to each question.

6. All questions are compulsory and carry equal marks, i.e. 3 marks for each question.

7. For the MCQ type questions each wrong answer will attract a penalty of one mark. There will be no negative marking for the non-MCQ type questions.

8. Answer the questions as quickly and as carefully as you can. Some questions may be difficult and others easy. Do not spend too much time on any one question.

9. You are not allowed to use a calculator or any other computing machine or device

VERBAL ABILITY AND READING COMPREHENSION [VARC]

Passage 1

Directions (Q. 1 to 4): *Read the following passage carefully and answer the questions that follows.*

Great nations thrive by constantly refreshing two great reservoirs of knowledge. The first is the knowledge of who we are as a people, how we got here, what long conflicts bind us together, what we find admirable and dishonourable, what kind of world we hope to build together. This kind of knowledge isn't merely factual knowledge. It is a moral framework from which to see the world. Homer taught the ancient Greeks how to perceive their reality.

For America, the dominant story has been filled with resonant characters — Irving Berlin and Woody Guthrie, Aaron Burr and Cesar Chavez, Sojourner Truth and Robert Gould Shaw. This national experience invited Americans to share Walt Whitman's passion to contain the whole vast carnival of stories, to see themselves in its themes, and to feel themselves within this story. This emotional and moral knowledge should give us a sense of identity, a sense of ideals to live up to and an appreciation of the values that matter most to us — equality or prosperity or freedom.

The second reservoir of knowledge is propositional knowledge. This is the kind of knowledge we acquire through logical proof. Some of this knowledge is empirical knowledge that can be established by using evidence carefully. No, the 2020 election was not stolen. Some of this knowledge is contained in powerful ideas that can be debated: "The history of all hitherto existing society is the history of class struggles." As Jonathan Rauch brilliantly writes in his book, *The Constitution of Knowledge*. It's not just a group of people commenting on each other's internet posts. It's a network of *institutions* — universities, courts, publishers, professional societies, media outlets — that have set up an interlocking set of procedures to hunt for error, weigh evidence and determine which propositions pass muster.

These are the same principles as those of the scientific method. An individual may be dumb, Rauch notes, but the whole network is brilliant, so long as everybody in it adheres to certain rules: no one gets the final

say (every proposition might be wrong); no claim to personal authority (who you are doesn't determine the truth of what you say, the evidence does); no retreat to safety (you can't ban an idea just because it makes you feel unsafe).

Today many of us feel that America is suffering an epistemic crisis. We don't see the same reality. People say that they often assume the problem is intellectual. Our system of producing propositional knowledge is breaking down. Why can't those people fact-check themselves? But Donald Trump doesn't get away with lies because his followers flunked Epistemology 101. He gets away with his lies because he tells stories of dispossession that feel true to many of them. Some students at elite schools aren't censorious and intolerant because they lack analytic skills. They feel entrapped by moral order that feels unsafe and unjust.

The collapse of trust, the rise of animosity — these are emotional, not intellectual problems. If a country can't tell narratives in which everybody finds an honourable place, then righteous rage will drive people toward tribal narratives that tear it apart. Part of the blame goes to conservatives who try to whitewash history. Part goes to progressives who tell such a negative version of history that it destroys patriotism. But the core problem is our failure to understand what education is.

Once you realize that people are primarily desiring creatures, not rational creatures, you realize that one of the great projects of schooling and culture is to educate the passions. It is to help people learn to feel the proper kind of outrage at injustice, the proper form of reverence before sacrifice, the proper swelling of civic pride, the proper affection for our fellows. This knowledge is conveyed not through facts but through emotional experiences — stories.

Over the past decades, we cut education in half. We focused on reason and critical thinking skills .The ability to tell complex stories about ourselves has atrophied. This is the ability to tell stories in which opposing characters can each possess pieces of the truth, stories in which all characters are embedded in time, at one point in their process of growth, stories rooted in the complexity of real life and not the dogma of ideological abstraction.

1. All of the following can be inferred form the passage, EXCEPT:
   (1) Propositional knowledge without truth is unlikely.
   (2) Propositional knowledge is simply knowing something or having knowledge *of* something.
   (3) Propositional knowledge does not allow the scope of knowing a person better.
   (4) Propositional knowledge allows the involvement of innate ability and is devoid of reasoning.

2. The primary factor behind the crisis in America is:
   (1) The precedence given to passion over faculty.
   (2) The collapse of passion to recount true stories to others.
   (3) The problem of narrating shared stories about the country.
   (4) The deficit of trust and rise of enragement.

3. The question whether the 2020 election was fraudulent testifies:
   (1) That people are gullible enough to believe the lies spread by the visionaries.
   (2) Americans can't agree on factual matters.
   (3) Americans' growing inability, not just to cooperate, but even to learn and know the same things.
   (4) America's rising hostility among themselves and the dousing the right to question.

4. Which of the following is NOT the writer's opinion on the first type of knowledge?
   (1) They are stories that defines the national self-concept.
   (2) This knowledge gives Americans a sense of identity, a sense of ideals to live up to and an appreciation of the values like equality or prosperity or freedom.
   (3) The acquisition of this kind of knowledge is a collective process.
   (4) The knowledge should help us discover a shared affection for one another.

Passage 2

Directions (Q. 5 to 8): *Read the following passage carefully and answer the questions that follows.*

It's unclear if white terns lived on the main Hawaiian Islands historically, before humans and the predators they towed along from Polynesia and Europe landed—no fossils of their delicate bones have been found—

yet scientists suspect they did. The first nesting pair of white terns recorded on the main Hawaiian Islands was found in 1961 at Honolulu's Koko Head area. The population of breeding birds in the city went from an estimated 200 in the 1980s to more than 2,200 recently, a dramatic increase. Genetic analysis indicates that some of Honolulu's white terns migrated from elsewhere in the Pacific.

Downs and Eric VanderWerf, a bird biologist and director of science with the nonprofit Pacific Rim Conservation, share two explanations for the birds' embrace of the city. The first explanation is that they nest in busy sections of Honolulu because pedestrians, car traffic, lights, and rodent control may reduce the abundance and activity of invasive predators like rats, cats, and mongooses that prey on the birds and their eggs. Outside the city, rats abound in the forest environment, and there are few places with any control measures, says VanderWerf. "So there actually may be more rats out in the forest than there are in urban environments, which I think may offset most people's intuition about what rats do."

On Australia's Lord Howe Island, a scientist who had set up camera traps documented no interactions between the island's rats and its white terns—instead he found that masked owls and Lord Howe currawongs were responsible for preying on the seabirds. VanderWerf suspects tree-climbing rats are the biggest threat to white tern eggs and chicks in the main Hawaiian Islands. The rodents have a varied diet, so eat what's available.

Feral cats, which have invaded every habitat on every main Hawaiian Island, occasionally climb trees to access terns, but they're more of a threat to chicks that fall, says Downs. "When a chick falls out of a tree, it's a race between us and the cat to see who gets there first."

Beth Flint, a US Fish and Wildlife Service scientist who has studied seabirds for more than four decades, says VanderWerf and Downs's theory makes sense, but more studies need to be done to test it. "Maybe there are fewer common myna and cattle egrets in town?" says Flint. "I don't know if that's true, but [the terns] are certainly vulnerable to those species as well."

The second explanation VanderWerf and Downs share is that Honolulu has more than 235,000 individual trees, and arborists cut off dead and cluttered branches in their crowns in public and private places throughout the city for safety and ornamental purposes, which also serves to improve nesting habitat. VanderWerf thinks the birds enjoy the extra room for flying around. They nest in at least 58 species of trees in the city, though seem to prefer medium or large nonnative species. One of their favorites, a mahogany, has flaky bark with crevices perfect for holding eggs. Another favored nonnative species, the kukui, forms cup-shaped scars after it's trimmed. Since white terns don't build nests, these abnormalities offer them a slightly less precarious place to lay eggs.

Downs, a former civil servant, became fascinated with white terns after retiring in 2014. He volunteered to help VanderWerf document every white tern nesting spot for the state. VanderWerf's official survey ended that year; Downs hasn't stopped collecting data. In 2016, he cofounded, and now directs, a white tern fan group called Hui Manu-o-Ku. One of the group's initiatives is to carry out white tern monitoring.

He remains the data-gathering king of the bunch. Before the COVID-19 pandemic, he double-checked every report that arrived from the fan group and visited an average of 1,200 nesting spots a month. He has recorded or confirmed more than 1,800 in more than 1,200 trees in the city. It takes him as little as two minutes to analyze a site and enter observations in his database. But he's not always rushing; once he returned a fallen chick to a branch and waited until its parent returned—seven hours later—to make sure it was safe. "They're choosing to live right here amongst us," Downs says.

The data the group has gathered, according to VanderWerf , has helped answer basic questions, including how many white tern eggs hatch (69 percent) and how many chicks parents raise annually (as many as three). VanderWerf and Downs collaborated on a scientific paper reporting these results and are working on another about the factors that affect breeding success.

In Honolulu, Downs and VanderWerf have seen the community rally around the terns. The city has embraced the seabird, partly because of its role in Hawaiian culture. Adult white terns hunting for their chicks keep small fish in their beaks during the flight home. Polynesian seafarers who navigate using

traditional methods based solely on environmental cues follow white terns with fish, knowing the birds are returning to land to feed their young. It was the mother of a revered Hawaiian navigator who, in 2007, successfully pushed to make white terns the official bird of Honolulu. In 2016, several state and conservation organizations started collaborating on an annual festival to celebrate the bird.

5. The explanations provided in the second paragraph can be best referred as:
   (1) Implied demonstration
   (2) Counter intuitive hypothesis
   (3) Analogous supposition
   (4) Cogent analysis

6. All of the following can be inferred from the passage , EXCEPT:
   (1) Terns don't usually nest near people.
   (2) Human habitation has proved categorically bad for seabirds in general.
   (3)) The population growth of terns can be attributed to breeding success.
   (4) Hui Manu-o-Ku provided insights into the white terns' breeding and nesting habits.

7. Which of the following, if true, will be advocated by VanderWerf?
   (1) Create greater awareness about non-native predators being a threat to seabirds.
   (2) Encourage participation from public to make tree maintenance a success.

   (3) Realize and recognize the need of the terns to settle among human civilization.
   (4) Ensure safe nesting habits and habitat of the white terns.

8. Which of the following justifies as the explanation forwarded by Beth Flint?
   (1) "Scientists would have to compare the number of invasive predators in the city to those in forests, and consider the role of avian predators."
   (2) "The disappearance of the chicks can be attributed to the predominance of the predators."
   (3) "One needs to scrutinize the role of invasive predators in its efficacy in reducing seabird populations."
   (4) "The immediate need is to enlist methods for measuring the effects of invasive predators, and emphasizes the value of deleting invasive predators from island food webs."

Passage 3

Directions (Q. 9 to 13): *Read the following passage carefully and answer the questions that follows.*

No doubt China has made enormous strides over these hundred years under the leadership of the CCP. A nation that British imperialism sought to convert into one of opium addicts, through the Opium Wars of the mid-19th century, and Japanese imperialism into a colonial appendage, is today the second-largest economic power in the world. The growth rate of its GDP has been phenomenal, indeed unprecedented for as long a period as the one over which it has been sustained. Its technological prowess, manifested most recently by its ambitious space programme, has been impressive. Indeed it is the only third world country of significance that appears to have climbed out of its state of underdevelopment: Japan, it must be remembered, had never belonged to the third world, and South Korea and the city-states much lauded by the Bretton Woods institutions are too small to signify.

The official claim of zero poverty, as evinced in China, is arrived at by taking a very low "poverty line", of 9 yuan per day in early 2020, which would just suffice to buy two one-litre bottles of water, but is quite insufficient for meeting all one's needs including food, clothing and shelter. It is surprising that despite the emergence of labour shortages in particular regions, China still has large unutilised labour reserves with which poverty is usually correlated. China's unemployment and poverty are proportionately much lower than in other Third World countries like India but they have not disappeared.

In this respect, China's experience is very different from that of the Soviet Union and other former socialist countries of Eastern Europe, which had used up their labour reserves and achieved full employment, even labour scarcity, a feat unparalleled in the contemporary world. Indeed, much criticism was directed at these countries for being one-party states and for imposing restrictions on individual freedom (as is being done against China) but even their detractors had to admit that they had eliminated unemployment and absolute poverty. This achievement had prompted the Hungarian economist Janos Kornai to remark that "classical capitalism is demand-constrained" "while classical socialism is resource-constrained".

China's development trajectory since the 1980s has not been oriented towards building socialism in the sense of creating a community within which the individual can lead an unalienated life; it has not even been oriented towards achieving full employment and eliminating poverty. Its orientation has rather been towards making China into a big power.

The context within which the CCP was formed a hundred years ago and the context within which it operates today have this element in common — the fear of imperialist encirclement and the CCP's desire to lead China out of such a predicament. True, there was actual imperialist presence on Chinese soil a hundred years ago (the CCP had met in 1921 within the "French concession" in Shanghai), while today there is no actual occupation. But the threat persists.

The debates on the economic trajectory to be followed in China have been not so much between those who want a restoration of capitalism and those who want to pursue socialism, but about whether China can become more powerful through a pure strategy of building socialism or through the pursuit of a strategy that also harnesses the resources of private capital, both Chinese and foreign. The CCP has on the whole chosen the latter course over the last four decades, though it has made several "course corrections" to ensure that popular anger against its economic policies does not reach a flashpoint.

This is why when peasant anger over land acquisition for industrial projects was giving rise to thousands of protests every year, the CCP had come up with the slogan of "Towards a socialist countryside".

Likewise, at different stages along the "reform" path, the CCP has used different props to keep its high growth rate going — from reliance on Township and Village Enterprises, to inviting foreign capital to set up export-oriented units, to stimulating home consumption through administered wage increases and the provision of credit.

I believe it is a mistake to think that a socialist strategy, based on the development of the communes, would have been less effective in thwarting imperialist encirclement of China; at the same time, it would have eliminated unemployment and poverty and given the regime a firmer domestic support base. But the fact of encirclement is real, as numerous US initiatives, from the now-defunct Trans-Pacific Partnership to the Quad, testify.

9. Which of the following best establishes the relationship between the first and the second paragraph?
   (1) The second paragraph is a reaffirmation of the argument propagated in the first paragraph.
   (2) The second paragraph refutes the claims of the first paragraph with examples.
   (3) The second paragraph is a paradoxical shift from the contention stated in the first paragraph.
   (4) The second paragraph is an aberration from the postulation established in the first paragraph.

10. Which of the following best expresses the essence of the second paragraph?
   (1) China's endeavours at poverty reduction are conspicuous by the labour shortages.
   (2) China's attempt at scaling poverty level has earned it the position of the second-largest economic power in the world.
   (3) Income inequality in China is quite pronounced, but on a comparatively lower scale.
   (4) Attempts at eradication of poverty is more pronounced in China, compared to other Third World countries.

11. The nationalistic tendencies of China can be attributed to:
   (1) The necessity to overcome the index of poverty, which is often associated with Third World countries.
   (2) The threat of being subjugated by powerful countries.
   (3) The elimination of the problem of unemployment.
   (4) An eye on the upliftment of society.

12. All of the following statements can be seen as logically implied by the arguments of the passage EXCEPT:
   (1) Poverty and abysmal conditions of life are necessarily linked to the existence of labour reserves.
   (2) In China, agriculture received a larger share of state investment than industry and productivity did.
   (3) Countries that control the world's commanding economic heights presume that capitalism is a self-contained and self-generating system.
   (4) China grew much faster than it had historically but, this was a result of a process of Del inking from imperialism.

13. In the light of the statement by Hungarian economist Janos Kornai, it can be inferred that:

(1) China's economic growth can be traced back to capitalism.

(2) China was prominently practising existing socialism.

(3) China's feat of poverty eradication is unlike that of other socialist countries.

(4) Criticism should not bog down a country's achievements.

Passage 4

Directions (Q. 14 to 16): *Read the following passage carefully and answer the questions that follows.*

Last month, the Climate Change Committee delivered a withering verdict on the government's failure to come up with a proper plan to deliver on its admirably ambitious net zero targets. As the committee released two dismal progress reports, which showed Britain behind on its goal of a 78% cut to greenhouse gases by 2035, its chairman, Lord Deben, observed: "The policy is just not there. It's clear we need to step up very rapidly."

On Wednesday, ministers were at it again. This time it was the turn of the transport minister, Grant Shapps, to unveil eye-catching net zero pledges. According to the government's delayed transport decarbonisation plan, polluting diesel and petrol lorries are to be banned in Britain by 2040 at the latest, and all types of transport will be decarbonised by 2050, yet Mr. Shapps has delivered no detail on how the bill for this hypothetical transition will be met. In aviation, where the government has pledged net zero internal UK flights by 2040, there is a similar gap between rhetoric and reality.

This airy techno-optimism costs nothing, of course, which suits the chancellor, Rishi Sunak, and means ministers can put off hard choices. But if the country is to even come close to net zero in 2050, they must back up these objectives with serious cash and a national plan. Homes, workplaces and everyday transport options need to be transformed. This will mean a mass mobilisation for which the government must be prepared to shoulder the financial burden, especially in relation to the less well-off. An architecture of green grants, subsidies and incentives must be introduced to remove financial obstacles for people who wish to do the right thing, but worry about the cost that will be incurred. In an AA poll last month, for example, two-thirds of respondents said that scrapping the 20% VAT on electric vehicles would be the quickest way to phase out petrol and diesel cars.

A more realistic route to net zero was outlined on Wednesday in a report published by the IPPR-led environmental justice commission, after a two-year consultation with citizens' juries, business leaders and trade unions. The cross-party commission, co-chaired by the Labour MP and former environment secretary Hilary Benn, calls for an extra £30bn of public investment in a low-carbon economy each year until 2030. Among the report's 100 recommendations are a £7.5bn green subsidy scheme promoting zero-carbon alternatives on home heating and insulation; redistribution of carbon tax revenues to the less well-off; free bus travel by 2025; and a right to retrain for workers in carbon-intensive industries. With the right levels of investment and support from government, its authors suggest, the transition to a low emissions economy can help create a fairer Britain as well as a greener one.

14. Which of the following ways will hardly be recommend by the writer of the passage to achieve net zero emissions?

(1) Increasing renewable energy sources of heat and electricity.

(2) Preserving biodiversity.

(3) Dodging attempts of offering financial support for coal, oil and gas nationally and internationally.

(4) Allowing companies to buy international carbon credit.

15. The primary purpose of the passage is to:

(1) Evaluate the efforts claimed and attained by the UK in respect to climate change.

(2) Exhort the government to lead by example and deliver on their promises.

(3) Highlight the realistic way of attaining the net-zero target.

(4) Argue that setting ambitious goals for net zero targets is not enough.

16. Which of the following best justifies the clause, 'there is a similar gap between rhetoric and reality'?

(1) Aspirations and reality can meet on the same ground, when there is a favourable policy at play.

(2) The net-zero aviation plan is incompatible with climate goals.

(3) In aviation, getting to net-zero through technological advances, is a bet on long odds.

(4) The net-zero aviation plan is considered unrealistic, as it only relies on offsetting any surplus emissions caused by aviation.

17. **The four sentences (labelled 1, 2, 3, 4) below, when properly sequenced would yield a coherent paragraph. Decide on the proper sequencing of the order of the sentences and key in the sequence of the four numbers as your answer:**

(1) A new vocational infrastructure will be required to reverse decades of neglect of the further education sector, and to open up traditionally male-dominated areas of skilled manual work to women.

(2) Its report, Qualifying for the Race for Net Zero, estimates that 3.2 million workers, employed in sectors such as construction, manufacturing and transport, will soon need to upskill or retrain.

(3) But, as a study released this week by the Onward thinktank points out, these goals will only be achieved through a labour market revolution in skills and training, which shows no sign of happening any time soon.

(4) The UK has committed to reduce emissions to net zero by 2050, to a 78% cut by 2035 and a 68% cut by 2030.

18. **The passage given below is followed by four alternate summaries. Choose the option that best captures the essence of the passage.**

Almost all elements of India's ruling structure come out as being embedded in the colonial project. The great families from the Tagores to the Tatas, the Indian Army, the Indian civil service, the legal profession, and pretty much any part of the ruling establishment displayed more continuity than discontinuity. Even post-Independence, the persistence of English and inculturation of new elites only reinforced this. It was prudent for this establishment to mark India's subjugation, but not to harp on the theme of humiliation too deeply, without exposing its own complicity in it.

(1) The ruling class of India owes its identity and distinctiveness to the colonial rule.

(2) Modern India's ruling class and identity was created as much by collaboration with colonialism as resistance to it.

(3) The formation of India's ruling class and its allegiance to the colonial rule is unexplored.

(4) The reality of the relation of India with colonialism was conflicting from what was portrayed.

19. **The four sentences (labelled 1, 2, 3, 4) below, when properly sequenced would yield a coherent paragraph. Decide on the proper sequencing of the order of the sentences and key in the sequence of the four numbers as your answer:**

(1) That leaves the one, albeit major, source of uncertainty: The spread, intensity and duration of the pandemic.

(2) That, needless to add, is a best case scenario — including for tractor, FMCG and cement companies that rode high on rural demand in 2020-21.

(3) The sole consolation as of now is that the main kharif planting season will begin only from mid-June with the arrival of the monsoon rains; if the current wave subsides by then, things shouldn't turn out too bad.

(4) The Indian Meteorological Department has forecast a normal southwest monsoon, while the Food and Agricultural Organisation's world food price index hit an 83-month-high in April; on both these fronts — rainfall and prices — the outlook for agriculture, thus, remains favourable.

20. **The passage given below is followed by four alternate summaries. Choose the option that best captures the essence of the passage.**

Turkish populist President Recep Tayyib Erdogan, in the AK Party's Congress, declared in defiance of his numerous critics, "We are the people, who are you?" This is the universal tune of populist politics. Populism is an exclusionary form of identity politics that poses a danger to democracy as democracy requires pluralism and the recognition that we need to find fair terms of living together as free, equal, but also irreducibly diverse citizens. The populist idea

of homogeneous and authentic people is a dangerous and inhumane fantasy.

(1) Populism is a threat to democratic ideologies which spreads inequality.

(2) Populists are always anti-pluralists, claiming they are the ones who represent people.

(3) The greatest threat to open society in our times is posed by authoritarian populism.

(4) Recep Tayyib Erdogan, just like any other populists, imperils diversity and pluralism of a society.

21. **The passage given below is followed by four alternate summaries. Choose the option that best captures the essence of the passage:**

Karl Popper in his *The Open Society and Its Enemies* (1945) said that modern civilisation, which is still in its infancy, is perhaps aiming at humanness and reasonableness, and equality and freedom. "This civilisation has not yet fully recovered from the shock of its birth – the transition from the tribal or 'closed society', with its submission to magical forces, to the 'open society' which sets free the critical powers of man," said Popper. He observed that the shock of the transition is one of the factors that have made possible the rise of those reactionary movements which have tried, and still try, to overthrow civilisation and to return to tribalism.

(1) Karl Popper highlights on the human tendency to go back to its roots because of the suddenness of intrusion of 'open society'.

(2) Karl Popper traces the origins of tribalism to be as old as human civilisation; it should be understood thoroughly and be fought against persistently.

(3) Karl Popper argues about the causes behind the inclination to return to tribalism and explains the concept of an open society.

(4) Karl Popper elucidates on the features of modern civilisation and traces the transition to open society.

22. **The four sentences (labelled 1, 2, 3, 4) below, when properly sequenced would yield a coherent paragraph. Decide on the proper sequencing of the order of the sentences and key in the sequence of the four numbers as your answer:**

(1) "It fits into a broader pattern that we've seen in police getting away with misconduct," said Michael Sisitzky, who leads the New York Civil Liberties Union police accountability campaign.

(2) Documents obtained by The Intercept and New York Focus under New York's Freedom of Information Law show that Egan is one of 27 former law enforcement officers to be decertified by state regulators and then rehired by another police department or public safety agency.

(3) These rehires point to the lack of oversight of so-called wandering officers and the limitations of the current decertification system in New York.

(4) In some instances, new employers were unaware that the officer they were hiring had previously been decertified.

23. **Five jumbled up sentences, related to a topic, are given below. Four of them can be put together to form a coherent paragraph. Identify the odd one out and key in the number of the sentence as your answer:**

(1) Clearly, a detailed demand-supply analysis would have enabled a more calibrated expansion of the eligibility criteria.

(2) India's failure to firm up advance purchase agreements with other vaccine producers or move with alacrity with the Sputnik application is attributed to a mistaken notion that SII and BB would be adequate for India's needs.

(3) India's monthly COVID vaccine manufacturing capacity is about 60-65 million doses — 60 million by Serum Institute of India (SII) and 1-5 million by Bharat Biotech (BB) against our final requirement of 1.45 billion doses to cover 70 per cent adults.

(4) Government has announced three important decisions: One, earmarking 50 per cent of the capacity for GoI, the rest for the open market; two, waiving bridging studies for market entry of foreign players; and three, astonishingly, permitting companies to set the price.

(5) In traumatised India, saving lives has become the highest priority to be achieved by vaccinating 70 per cent of the adult population or 654 million people.

24. **Five jumbled up sentences, related to a topic, are given below. Four of them can be put together to form a coherent paragraph. Identify the odd one out and key in the number of the sentence as your answer:**

    (1) On the other hand, internet connectivity in a gram panchayat is considered open if end users are connected to the internet grid.

    (2) In fact, the erstwhile BharatNet project, which began in 2011 as National Optical Fibre Network, missing various deadlines has been delayed by 92 months.

    (3) The government had envisaged connecting 1 lakh gram panchayats to high-speed internet by 2019 under phase one, and another 1.5 lakh panchayats under phase two by March 2020.

    (4) A gram panchayat becomes service-ready when it is connected to the main grid of the internet of the block headquarters of that area.

    (5) After it had failed to meet the targets in March 2020, the government extended the deadline for completion of both phases by August 2021.

DATA INTERPRETATION AND LOGICAL REASONING [DILR]

Directions (Q. 1 to 4): *Read the instructions given and answer the questions that follow:*

Given below is the bar graph of the Revenue and Market share of 5 companies which are from five different countries P, Q, R, S and T not in any particular order.

Revenue in 2019 (in Million Dollar)
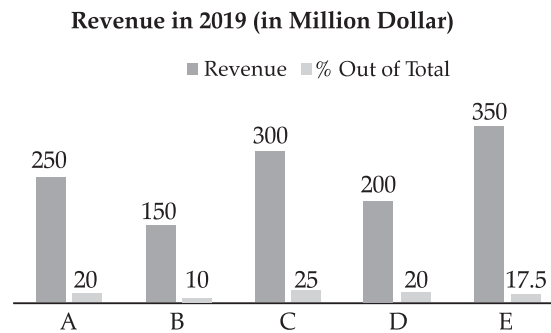
Given below is the Bar Graph that shows the Percentage growth in the total revenues of the five companies.

Revenue Growth in 2020 (in percentage)
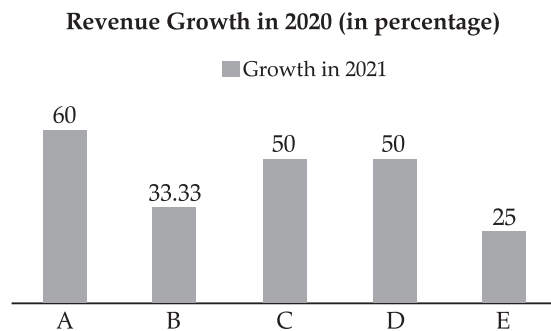
Additional Facts:

(a) Companies from Q and R neither have the minimum nor the maximum Revenue in 2019, but their revenues are equal in 2020.

(b) T has the company with least revenue in both the years.

(c) P has the company with half the growth rate in 2020 compared to the country with least revenue in 2020.

1. Given that the company from country P had the highest growth rate in 2020, what was the revenue of the country from R in 2019?
   (1) $ 1250
   (2) $ 1500
   (3) $ 1200
   (4) $ 2000

2. Which country had the company with highest revenue in 2020?

   (1) T   **(2)** S

   (3) P   **(4)** Can't be determined

3. Which country had the company with highest growth rate in 2020?

   (1) Q   **(2)** S

   (3) P   **(4)** Can't be determined

4. Which of the following is not the country to have equal increase in revenue compared to the other four in 2020?

   (1) R   **(2)** S

   (3) P   **(4)** T

Directions (Q. 5 to 8): *Answer the questions on the basis of the information given below.*

In a Class X Board examination, ten papers are distributed over five Groups as PCB, Mathematics, Social Science, Vernacular and English. Each of the ten papers is evaluated out of 100. The final score of a student is calculated in the following manner. First the Group Scores are obtained by averaging marks in the papers within the Group. The final score is the simple average of the Group Scores. The data for the top ten students are presented below. (Dipan's score in English Paper II has been intentionally removed in the table).

Name of the student	PCB Group			Mathematics Group	Social Science Group		Vernacular Group		English Group		Final Score
	Phy	Chem	Bio		Hist.	Geo.	Paper I	Paper II	Paper I	Paper II	
Ayesha (G)	98	96	97	98	95	93	94	96	96	98	96.2
Ram (B)	97	99	95	97	95	96	94	94	96	98	96.1
Dipan (B)	98	98	98	95	96	95	96	94	96	??	96.00
Sagnik (B)	97	98	99	96	96	98	94	97	92	94	95.9
Sanjiv (B)	95	96	97	98	97	96	92	93	95	96	95.7
Shreya (G)	96	89	95	100	97	98	94	95	96	95	95.5
Joseph (B)	90	94	98	100	94	97	90	92	94	95	95.0
Agni (B)	96	99	96	99	95	96	82	93	92	93	94.3
Pritam (B)	98	98	95	98	83	95	90	93	94	94	93.9
Tirna (G)	96	98	79	99	85	94	92	91	87	96	93.7

Note: B or G against the name of a student respectively indicates whether the student is a boy or a girl.

5. Students who obtained Group Scores of at least 95 in every group are eligible to apply for a prize. Among those who are eligible, the student obtaining the highest Group Score in Social Science Group is awarded this prize. The prize was awarded to:

   (1) Shreya   **(2)** Ram

   (3) Ayesha   **(4)** Dipan

6. Among the top ten students, how many boys scored at least 95 in at least one paper from each of the groups?

   (1) 1   **(2)** 2

   (3) 3   **(4)** 4

7. Each of the ten students was allowed to improve his/her score in exactly one paper of choice with the objective of maximizing his/her final score. Everyone scored 100 in the paper in which he or she chose to improve. After that, the topper among the ten students was:

   (1) Ram   **(2)** Pritam

   (3) Ayesha   **(4)** Dipan

8. Had Joseph, Agni, Pritam and Tirna each obtained Group Score of 100 in the Social Science Group, then their standing in decreasing order of final score would be:

   (1) Pritam, Joseph, Tirna, Agni

   (2) Joseph, Tirna, Agni, Pritam

   (3) Pritam, Agni, Tirna, Joseph

   (4) Joseph, Tirna, Pritam, Agni

Directions (Q. 9 to 12): *Answer the questions based on the following information.*

A travelling website conducted a survey about five hill stations. A traveller Amit gave score out of 3 in three parameters- Beauty, weather and connectivity. Net rating out of 15 is calculated by allotting weightage to these parameters in the respective ratio 2:1:2. For example, net rating of Mount Abu = $2 \times 1.5 + 1 \times 1.5 + 2 \times 2 = 8.5$. Few scores are missing in the table below.

Hill station	Beauty	Weather	Connectivity	Total Rating
Nanital	2	3		
Mussoorie		3	3	
Shimla	2		1	
Mount Abu	1.5	1.5	2	8.5
Mcleodganj	3		1	

Further it is known that

(a) All scores are in the multiple of 0.5 and greater than or equal to 1.

(b) Mount Abu net rating is not the lowest?

(c) McLeodganj and Nanital has same net rating.

9. Which state has the lowest net rating?
(1) Nainital
(2) Mussoorie
(3) Shimla
(4) Mcleodganj

10. How many different values of net rating of Nanital is possible?
(1) 1
(2) 2
(3) 3
(4) 4

11. If net rating of Mcleodganj is greater than or equal to 11, and score of Mussoorie in Beauty is 2.5, then what is the difference in the net rating of Nainital and Mussoirie?
(1) 1
(2) 1.5
(3) 2
(4) 3

12. What can be the maximum difference in the net rating of Mussoorie and Shimla?
(1) 6
(2) 5
(3) 8
(4) 9

Directions (Q. 13 to 16): *Answer the questions based on the following information.*

The data given in the table shows the investment details in country 'Wonder Land' of companies P, Q, R, S, T and U. Figures in the table are in US dollars in billions.

	P	Q	R	S	T	U
Year 1	2.5	4.6	5.8	3.11	10.6	7.8
Year 2	6.7	7.5	12.5	5.6	17.4	25.3
Year 3	11.5	18.7	21.2	7.7	29.8	60.1

13. What is the percentage (%) increase in investment of Q, R, S and T from year 1 to year 3?

14. What is the difference value of investments of T to U for the years 1 to 3?

15. What is S's contribution as a percentage (%) of total investments in year 2?

16. What is the percentage (%) difference in investments of companies P, Q, R and companies S, T, U in year 2?

Directions (Q. 17 to 20): *Answer the questions based on the following information.*

An organization, organized an event 'World of MBA'. Adarsh Recruited 'n' interns for outreach marketing. Each intern generated on an average m lead (leads are the total number of students who give confirmation for attending the event). 'n' satisfies following equation

$n^2 + 2n - 840 = 0$.

Also 'm' is an odd number between 30 and 40 such that m has exactly 4 factors. Also '9m' has exactly 12 factors.

17. Shivani was the top performing intern with maximum leads (93) while Shweta and Aakhya were worst performers with lowest number of leads (16 each) then what is the approximate

average number of leads of remaining interns?

18. Out of total leads generated, 30 % didn't turned up in the event. And 136 had to return as Event hall seats was fully occupied, then what was the number of seats in the hall?

19. Mansi (70 leads) and Vaani (73 leads) together generated what percentage (%) of total number of leads?

20. If $9m$ had 8 factors instead of 12, then what is the number of value of 'm'?

QUANTITATIVE ABILITY [QA]

1. Find the total number of 3-digit numbers such that the product of their digit is more than 3, but less than 9.

2. Consider the function $g(x)$ such that $g(x) = 0$ and $g(6 + x) = g(6 - x)$ for all real values of x. What is the sum of the roots of $g(x)$, if it has four distinct real roots?
   (1) 18 (2) 30
   (3) 27 (4) 24

3. In a bank, Arun deposited ₹20,000 at 13% simple annual interest. Exactly after three years, Barun deposited ₹30,000 at 8% simple annual interest. They received equal amounts after n years since Arun deposited. The value of n is

4. A man travelled from home to his office at two-fifth of his usual speed, and hence reached his office 45 minutes after the scheduled time. While returning from his office, he travelled at his usual speed for 10 minutes, thereafter stopped for 5 minutes to meet his friend. By what percent must the man increase his speed so as to reach home at the scheduled time?
   (1) 25% (2) 29%
   (3) 33.33% (4) 42%

5. The value of 'a' in $\log_3 7 = (\log_3 a)\left(\log_8 \sqrt{7}\right)$ is

6. Two trains A and B travel between stations P and Q. A travels from P to Q and B travels from Q to P, both leaving their starting stations at the same time. After meeting each other at station R, A takes 3 hours, while B takes 1 hour 20 minutes to reach their respective destination. What is the speed of B, in km/h, if A travels at the speed of 54 km/h?
   (1) 81 (2) 60
   (3) 72 (4) 90

7. P, Q and R are the three natural numbers such that the sum of P and the average of Q and R is 6. If the sum of Q and the average of P and R is 9, then the sum of P and Q is
   (1) 10 (2) 7
   (3) 8 (4) 9

8. If $a = (6561)^{8+3\sqrt{7}}$, then 81 can be expressed as which of the following?
   (1) $\dfrac{a^4}{a^{(3/2)\sqrt{7}}}$ (2) $\dfrac{a^7}{a^{4\sqrt{3}}}$
   (3) $\dfrac{a^4}{a^{3\sqrt{7}}}$ (4) $\dfrac{a^4}{a^{7\sqrt{3}}}$

9. Find the mean of all 4-digit even natural numbers of the form '$xxyy$', where $x > 0$ and $y > 2$.
   (1) 6677 (2) 4848
   (3) 5544 (4) 5566

10. How many distinct positive real roots of the equation $\left(x - \dfrac{3}{x}\right)^2 - 3\left(x - \dfrac{3}{x}\right) - 10 = 0$ exist?

11. Suresh bought a refrigerator and a washing machine for ₹ 40,000 from a dealer. He sold the refrigerator at 5% loss and the washing machine at 15% profit. He earned an overall profit of 4%. What is the price, in rupees, of the refrigerator?

12. P and Q are driving cars beside a railway line. Both P and Q are driving at speeds 15 km per hour and 21 km per hour, respectively in the same direction. A goods train coming from behind crosses them in 96 and 120 seconds, respectively. How much time, in seconds, will the goods train take to cross an electric pole?
    (1) 72 (2) 68
    (3) 64 (4) 60

13. The number of distinct positive integer x for the equation $(x^2 - 11x + 25)^{x^2 - 8x + 15} = 1$ is
    (1) 4 (2) 3
    (3) 2 (4) 1

14. Calculate the area of the region lying between the curves $|x| + y \leq 2$, $y \geq 0$ and $y \leq 1$.

15. A rhombus with diagonals 10 cm and 24 cm has a circle inscribed in it. Find the ratio of the area of the circle to the area of the rhombus.

(1) $\dfrac{30\pi}{169}$ (2) $\dfrac{25\pi}{169}$

(3) $\dfrac{36\pi}{169}$ (4) $\dfrac{60\pi}{169}$

16. John leaves for his office daily at the same time. He reaches his office at 10:20 am if he travels at 9 km/h. He reaches office at 9:45 am when he travels at 16 km/h. If he leaves for office at 9:05 am, at what speed he must travel to reach office at 9:45 am?

(1) 14 km/h (2) 15 km/h

(3) 12 km/h (4) 18 km/h

17. p, q and r are three positive integers such that $pq = 384$, $qr = 72$ and $r < 12$. The smallest possible value of $p + q + r$ is

(1) 41 (2) 43

(3) 49 (4) 45

18. A circle is inscribed in a rectangle such that it touches the opposite two sides of it. The area of the rectangle excluding the circle is three-fifth of the area of the circle. If the area of the whole rectangle is 160 sq. cm, then the perimeter of the rectangle, in cm, is

(1) $4\sqrt{\pi}\left(2+\dfrac{5}{\pi}\right)$ (2) $5\sqrt{\pi}\left(3+\dfrac{2}{\pi}\right)$

(3) $8\sqrt{2}\left(5+\dfrac{2}{\pi}\right)$ (4) $8\sqrt{\pi}\left(\dfrac{2+5}{\pi}\right)$

19. In a computer class, 32% of the students are girls. In the same class, 63% of the students are rich and the rest are poor. Among the rich students, 33.33% are girls. The percentage of the boys among the poor students is nearest to

(1) 75 (2) 72

(3) 70 (4) 68

20. A scientist invented a new drug to fight Covid-19 by incorporating elements P, Q and R in the proportion 2 : 3 : 5 by volume. The weights of the same volume of elements P, Q and R were in the ratio 4 : 5 : 3. What is the weight of element P, in gram (g), in 0.076 kg of the drug?

(1) 15 (2) 16

(3) 14 (4) 18

21. Sukanya celebrated her birthday by distributing chocolates among the poor children. She gave one more than half of total chocolates to the first child, and then one more than half of the remaining chocolates to the second child and so on. She exhausted all her chocolates after the seventh child. The number of chocolates Sukanya initially had was

22. A dishonest milkman sells 32 litres mixture of milk and water in the guise of pure milk. The mixture contains milk and water in the ratio 5 : 3. He added water to the mixture to change the ratio to 4 : 3. He takes one-fifth of the mixture out of it. How many litres of milk must he add to the remaining mixture to get the original ratio?

ANSWERS

Verbal Ability and Reading Comprehension [VARC]

Q.No.	Answer	Topic Name	Chapter Name
1	4	Inference-based	Reading Comprehension
2	3	Fact-based	Reading Comprehension
3	3	Sentence Completion	Reading Comprehension
4	3	Odd statement out	Reading Comprehension
5	2	Inference-based	Reading Comprehension
6	2	Odd statement out	Reading Comprehension
7	1	Correct Statement	Reading Comprehension
8	1	Correct Statement	Reading Comprehension
9	3	Correct Statement	Reading Comprehension

10	3	Essence of the Paragraph	Reading Comprehension
11	2	Sentence Completion	Reading Comprehension
12	2	Odd statement out	Reading Comprehension
13	1	Inference-based	Reading Comprehension
14	2	Incorrect Statement	Reading Comprehension
15	4	Primary Purpose	Reading Comprehension
16	3	Meaning of a Clause	Reading Comprehension
17	[4321]	Ordering of Statements	Para Jumbles
18	2	Essence of the Passage	Reading Comprehension
19	[4132]	Ordering of Statements	Para Jumbles
20	2	Essence of the Passage	Reading Comprehension
21	3	Essence of the Passage	Reading Comprehension
22	[2431]	Ordering of Statements	Para Jumbles
23	5	Ordering of Statements	Para Jumbles
24	2	Ordering of Statements	Para Jumbles

Data Interpretation and Logical Reasoning [DILR]

Q.No.	Answer	Topic Name	Chapter Name
1	2	Bar Graph	Data Interpretation
2	3	Bar Graph	Data Interpretation
3	4	Bar Graph	Data Interpretation
4	2	Bar Graph	Data Interpretation
5	4	Data Tables	Data Interpretation
6	1	Data Tables	Data Interpretation
7	4	Data Tables	Data Interpretation
8	1	Data Tables	Data Interpretation
9	3	Missing Element	Data Interpretation
10	3	Missing Element	Data Interpretation
11	4	Missing Element	Data Interpretation
12	3	Missing Element	Data Interpretation
13	[221]	Data Tables	Data Interpretation
14	[35.4]	Data Tables	Data Interpretation
15	[74]	Data Tables	Data Interpretation
16	[81]	Data Tables	Data Interpretation
17	[34.2]	Critical Reasoning	Logical Reasoning
18	[550]	Critical Reasoning	Logical Reasoning
19	[14.6]	Critical Reasoning	Logical Reasoning
20	[2]	Critical Reasoning	Logical Reasoning

Quantitative Ability [QA]

Q.No.	Answer	Topic Name	Chapter Name
1.	(31)	Miscellaneous	Number System
2.	4	Functions and Graphs	Algebra
3.	(14)	Simple Interest and Compound Interest	Arithmetic
4.	3	Time, Speed and Distance	Arithmetic
5.	(64)	Logarithm and Exponents	Algebra
6.	1	Time, Speed and Distance	Arithmetic
7.	3	Average	Arithmetic
8.	1	Logarithm and Exponents	Algebra
9.	4	Average	Arithmetic
10.	(1)	Equations and Polynomials	Algebra
11.	(22000)	Profit, Loss and Discount	Arithmetic
12.	3	Time, Speed and Distance	Arithmetic
13.	2	Equations and Polynomials	Algebra
14.	(3)	Co-ordinate Geometry	Geometry and Mensuration
15.	1	Mensuration	Geometry and Mensuration
16.	4	Time, Speed and Distance	Arithmetic
17.	2	Divisibility	Number System
18.	4	Mensuration	Geometry and Mensuration
19.	3	Percentage and Function	Arithmetic
20.	2	Mixture and Solution	Arithmetic
21.	(254)	Miscellaneous	Miscellaneous
22.	(4)	Mixture and Solution	Arithmetic