CAT 2024 Slot 3 Question Paper

Conducted by the Indian Institute of Management Calcutta (IIM Calcutta)

Time Allowed: 2 Hours | **68 Questions** | **Maximum Marks: 204**

General Instructions

(i) This paper contains the questions from **CAT 2024 Slot 3**, held by **IIM Calcutta** as a **computer-based test** with a **2-hour (120-minute)** duration.

(ii) The paper has **68 questions** and a maximum of **204 marks**, divided into three sections in this order: **Verbal Ability and Reading Comprehension (VARC)** - **24 questions**, **Data Interpretation and Logical Reasoning (DILR)** - **22 questions** and **Quantitative Ability (QA)** - **22 questions**.

(iii) Each section is timed separately: **40 minutes per section**. A candidate cannot switch between sections, and the screen moves to the next section automatically when the time for a section ends.

(iv) Questions are of two types: **multiple choice questions (MCQs)** with four options of which one is correct, and **Type In The Answer (TITA)** questions, for which the answer is typed in using the on-screen keypad.

(v) **Marking scheme: +3** for every correct answer; **-1** for every incorrect MCQ; **no negative marking** for TITA questions; and **0** for an unanswered question.

(vi) Rough work is to be done on the rough sheets provided at the centre, which must be returned after the test. An on-screen calculator is available; no other calculators or electronic gadgets are allowed.

VARC - Verbal Ability and Reading Comprehension · Questions 1-24

1. The passage given below is followed by four alternate summaries. Choose the option that best captures the essence of the passage. Humans have managed to tweak the underlying biology of various plants and animals to produce high-tech crops and microbes. But regulating these entities is complicated, as the framework of policies and procedures are outdated and not flexible enough to adapt to emerging technology. The question is whether regulation will ever be able to keep up with human innovation, to regulate living things, which are apt to be unpredictable and unique; to capture all the potential risks when new biological entities are introduced, or when they pass on variations of their genes?

(A) The mercurial nature of biological entities calls for scientists to shape the regulations governing emerging technology, with regular calibration to handle variations in the field.

(B) A new framework of rules and procedures for regulating the most recent research emerging from biotechnology is urgently needed, to keep up with this rapidly changing discipline.

(C) Current regulation of biotechnology is outdated, but it is debatable if we can create a framework, imaginative and flexible, to cover all contingencies in this fast-changing area.

(D) The problem with formulating regulation for innovation in the scientific arena it that it is impossible to imagine the outcomes or risks related to the outcomes of all the research.

Questions 2 to 5

The passage below is accompanied by four questions. Based on the passage, choose the best answer for each question.

Languages become endangered and die out for many reasons. Sadly, the physical annihilation of communities of native speakers of a language is all too often the cause of language extinction. In North America, European colonists brought death and destruction to many Native American communities. This was followed by US federal policies restricting the use of indigenous languages, including the removal of native children from their communities to federal boarding schools where native languages and cultural practices were prohibited. As many as 75 percent of the languages spoken in the territories that became the United States have gone extinct, with slightly better language survival rates in Central and South America ...

Even without physical annihilation and prohibitions against language use, the language of the "dominant" cultures may drive other languages into extinction; young people see education, jobs, culture and technology associated with the dominant language and focus their attention on that language. The largest language "killers" are English, Spanish, Portuguese, French, Russian, Hindi, and Chinese, all of which have privileged status as dominant languages threatening minority languages.

When we lose a language, we lose the worldview, culture and knowledge of the people who spoke it, constituting a loss to all humanity. People around the world live in direct contact with their native environment, their habitat. When the language they speak goes extinct, the rest of humanity loses their knowledge of that environment, their wisdom about the relationship between local plants and illness, their philosophical and religious beliefs, as well as their native cultural expression (in music, visual art and poetry) that has enriched both the speakers of that language and others who would have encountered that culture ...

As educators deeply immersed in the liberal arts, we believe that educating students broadly in all facets of language and culture ... yields immense rewards. Some individuals educated in the liberal arts tradition will pursue advanced study in linguistics and become actively engaged in language preservation, setting out for the Amazon, for example, with video recording equipment to interview

the last surviving elders in a community to record and document a language spoken by no children.

Certainly, though, the vast majority of students will not pursue this kind of activity. For these students, a liberal arts education is absolutely critical from the twin perspectives of language extinction and global citizenship. When students study languages other than their own, they are sensitized to the existence of different cultural perspectives and practices. With such an education, students are more likely to be able to articulate insights into their own cultural biases, be more empathetic to individuals of other cultures, communicate successfully across linguistic and cultural differences, consider and resolve questions in a way that reflects multiple cultural perspectives, and, ultimately extend support to people, programs, practices, and policies that support the preservation of endangered languages.

There is ample evidence that such preservation can work in languages spiraling toward extinction. For example, Navajo, Cree, and Inuit communities have established schools in which these languages are the language of instruction, and the number of speakers of each has increased.

2. In the context of the passage, which one of the following hypothetical scenarios, if true, is NOT an example of the kind of loss that occurs when a language becomes extinct?

(A) The Nicobarese language describes 20 different moods of the ocean. By the time the last speaker is educated in a Central Board school, they will have forgotten their language.

(B) The Lamkangs of Manipur have only 3 remaining native speakers of the language. When they die, we will lose one more group from the government list of indigenous tribes.

(C) The Andamanese language has a word to describe someone who has lost a step-sister. When the language dies, we will lose the concept of the word and the emotions it evokes.

(D) The Inuits of Alaska have 35 different words to describe the texture of snow. When the language becomes extinct, we will lose that understanding of nature.

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3. Which one of the following hypothetical scenarios, if true, would most strongly undermine the central ideas of the passage?

(A) Most liberal arts students will pursue jobs in publishing and human resource management rather than doctorates in linguistics.

(B) A liberal arts education requires that, in addition to being fluent in English, students gain fluency in two of the top five most spoken languages globally.

(C) Schools that teach endangered languages can preserve the language only for a generation.

(D) Recording a dying language that has only a few remaining speakers freezes it in time: it stops evolving further.

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4. It can be inferred from the passage that it is likely South America had a slightly better language survival rate than North America for all of the following reasons EXCEPT:

(A) European colonists allowed children of native speakers to stay at home with their families.

(B) the colonial government was unable to mainstream the locals.

(C) not many native speakers were killed by European colonists.

(D) locals were provided job opportunities in the colonial administration.

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5. The author believes that a liberal arts education combined with participation in language preservation empower students in all of the following ways EXCEPT that they will

(A) overcome cultural barriers to communication.

(B) learn different languages.

(C) establish schools to preserve languages spiralling towards extinction.

(D) develop a better understanding of their own culture.

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6. **Five jumbled-up sentences (labelled 1, 2, 3, 4 and 5) related to a topic are given below. Four of them can be put together to form a coherent paragraph. Identify the odd sentence and key in the number of that sentence as your answer.**

1. To create a synapse, the neuron has specialized structures, often seen as tiny swellings, at its terminal end of the axon where it stores the chemicals that are emitted to transmit a signal to the next neuron.

2. This fetal warm-up act—the soldering of neural connections before the eyes actually function—is crucial to the performance of the visual system.

3. The reasons for this paring back of synapses is a mystery, but synaptic pruning is thought to sharpen and reinforce the "correct" synapses, while removing the weak and unnecessary ones.

4. Neural connections between the eyes and the brain are formed long before birth, establishing the wiring and the circuitry that allow a child to begin visualizing the world the minute she emerges from the womb.

5. During this rehearsal period, synapses—points of chemical connection—between nerve cells are generated in great excess, only to be pruned back during later development.

Type in the answer.

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7. **The passage given below is followed by four alternate summaries. Choose the option that best captures the essence of the passage.** When the tradwife puts on that georgic, pinstriped dress, she is not just admiring the visual cues of a fantastical past. She takes these dreams of storybook bliss literally, tracing them backward in time until she reaches a logical conclusion that satisfies her. And by doing so, she ends up delivering an unhappy reminder of just how much our lives consist of artifice and playacting. The tradwife outrages people because of her deliberately regressive ideals. And yet her behaviour is, on some level, indistinguishable from the non-tradwife's. The tradwife's trollish genius is to beat us at our own dress-up game. By insisting that the idyllic cottage daydream should be real, right down to the primitive gender roles, she leaves others feeling hollow, cheated. The hullabaloo and headaches she causes may be the price we pay for taking too many things at face value: our just deserts, served Instagram-perfect by a manicured hand on a gorgeous ceramic dish, with fat, mouthwatering maraschino cherries on top.

(A) The tradwife's commitment to outdated gender roles and retro fashion critiques the superficiality of today's societal ideals.

(B) By promoting an idealized past, the tradwife exposes the artifice of contemporary values and mocks societal norms.

(C) The tradwife, with her vintage dress and traditional roles, highlights the superficiality of modern life and challenges current societal norms.

(D) The tradwife's vintage dress and adherence to traditional roles reveal the artificial nature of modern life and its superficial values.

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8. Five jumbled-up sentences (labelled 1, 2, 3, 4 and 5) related to a topic are given below. Four of them can be put together to form a coherent paragraph. Identify the odd sentence and key in the number of that sentence as your answer.

1. Part of the appeal of forecasting is not just that it seems to work, but that you don't seem to need specialized expertise to succeed at it.

2. The tight connection between forecasting and building a model of the world helps explain why so much of the early interest in the idea came from the intelligence community.

3. This was true even though the latter had access to classified intelligence.

4. One frequently cited study found that accurate forecasters' predictions of geopolitical events, when aggregated using standard scientific methods, were more accurate than the forecasts of members of the US intelligence community who answered the same questions in a confidential prediction market.

5. The aggregated opinions of non-experts doing forecasting have proven to be a better guide to the future than the aggregated opinions of experts.

Type in the answer.

Questions 9 to 12

The passage below is accompanied by four questions. Based on the passage, choose the best answer for each question.

There is a group in the space community who view the solar system not as an opportunity to expand human potential but as a nature preserve, forever the provenance of an elite group of scientists and their sanitary robotic probes. These planetary protection advocates [call] for avoiding "harmful contamination" of celestial bodies. Under this regime, NASA incurs great expense sterilizing robotic probes in order to prevent the contamination of entirely theoretical biospheres ...

Transporting bacteria would matter if Mars were the vital world once imagined by astronomers who mistook optical illusions for canals. Nobody wants to expose Martians to measles, but sadly, robotic exploration reveals a bleak, rusted landscape, lacking oxygen and flooded with radiation ready to sterilize any Earthly microbes. Simple life might exist underground, or down at the bottom of a deep canyon, but it has been very hard to find with robots. . . . The upsides from human exploration and development of Mars clearly outweigh the welfare of purely speculative Martian fungi ...

The other likely targets of human exploration, development, and settlement, our moon and the asteroids, exist in a desiccated, radiation-soaked realm of hard vacuum and extreme temperature variations that would kill nearly anything. It's also important to note that many international competitors will ignore the demands of these protection extremists in any case. For example, China recently sent a terrarium to the moon and germinated a plant seed—with, unsurprisingly, no protest from its own scientific community. In contrast, when it was recently revealed that a researcher had surreptitiously smuggled super-resilient microscopic tardigrades aboard the ill-fated Israeli Beresheet lunar probe, a firestorm was unleashed within the space community ...

NASA's previous human exploration efforts made no serious attempt at sterility, with little notice. As the Mars expert Robert Zubrin noted in the National Review, U.S. lunar landings did not leave the campsites cleaner than they found it. Apollo's bacteria-infested litter included bags of feces. Forcing NASA's proposed Mars exploration to do better, scrubbing everything and hauling out all the trash, would destroy NASA's human exploration budget and encroach on the agency's other directorates, too. Getting future astronauts off Mars is enough of a challenge, without trying to tote weeks of waste along as well.

A reasonable compromise is to continue on the course laid out by the U.S. government and the

National Research Council, which proposed a system of zones on Mars, some for science only, some for habitation, and some for resource exploitation. This approach minimizes contamination, maximizes scientific exploration ... Mars presents a stark choice of diverging human futures. We can turn inward, pursuing ever more limited futures while we await whichever natural or manmade disaster will eradicate our species and life on Earth. Alternatively, we can choose to propel our biosphere further into the solar system, simultaneously protecting our home planet and providing a backup plan for the only life we know exists in the universe. Are the lives on Earth worth less than some hypothetical microbe lurking under Martian rocks?

9. The author is unlikely to disagree with any of the following EXCEPT:

(A) the proposal for a zonal segregation of the Martian landscape into regions for different purposes.

(B) that while NASA's earlier missions were not ideal in their approach to space contamination, they likely did no grave damage.

(C) space contamination should be minimised until the possibility of life on the astronomical body being explored is ruled out.

(D) the exorbitant costs of continuing to keep the space environment pristine may be unsustainable.

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10. The author mentions all of the following reasons to dismiss concerns about contaminating Mars EXCEPT:

(A) the lack of evidence of living organisms on Mars makes possible contamination from earthly microbes a moot point.

(B) efforts to contain contamination on Mars are likely to be derailed as competitor countries may not follow similar restrictions.

(C) the use of similar probes on astronomical bodies like the moon have had little effect on the environment.

(D) earlier explorations have already contaminated pristine space environments.

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11. The author's overall tone in the first paragraph can be described as

(A) sceptical about the excessive efforts to sanitise planets where life has not yet been proven to exist.

(B) equivocal about the reasons extended by the group of scientists seeking to limit space exploration.

(C) indifferent to the elitism of a few scientists aiming to corner space exploration.

(D) approving of the amount of money NASA spends to restrict the spread of contamination in space.

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12. The contrasting reactions to the Chinese and Israeli "contaminations" of lunar space

(A) are valid as the contamination of the lunar environment from animal sources is far greater than from plants.

(B) are evidence of China's reasonable approach towards space contamination.

(C) indicate that national scientists may have different sensitivities to issues of biosphere protection.

(D) reveal global biases prevalent in attitudes towards different countries.

Questions 13 to 16

The passage below is accompanied by four questions. Based on the passage, choose the best answer for each question.

Moutai has been the global booze sensation of the decade. A bottle of its Flying Fairy, which sold in the 1980s for the equivalent of a dollar, now retails for $400. Moutai's listed shares have soared by almost 600% in the past five years, outpacing the likes of Amazon ...

It does this while disregarding every Western marketing mantra. It is not global, has meagre digital sales and does not appeal to millennials. It scores pitifully on environmental, social and government measures. In the Boy Scout world of Western business, it would leave a bad taste in more ways than one.

Moutai owes its intoxicating success to three factors—not all of them easy to emulate. First, it profits from Chinese nationalism. Moutai is known as the "national liquor". It was used to raise spirits and disinfect wounds in Mao's Long March. It was Premier Zhou Enlai's favourite tipple, shared with Richard Nixon in 1972. Its centuries-old craftsmanship—it is distilled eight times and stored for years in earthenware jars—is a source of national pride. It also claims to be hangover-proof, which would make it an invention to rival gunpowder ...

Second, it chose to serve China's super-rich rather than its middle class. Markets are littered with the corpses of firms that could not compete in the cut-throat battle for Chinese middle-class wallets. And the country's premium market is massive—at 73m-strong, bigger than the population of France, notes Euan McLeish of Bernstein, an investment firm, and still less crowded with prestige brands than advanced economies. Moutai is to these well-heeled drinkers what vintage champagne is to the rest of the world ...

Third, Moutai looks beyond affluent millennials and digital natives. The elderly and the middle-aged, it found, can be just as lucrative. Its biggest market now is (male) drinkers in their mid-30s. Many have no siblings, thanks to four decades of China's one-child policy—which also means their elderly parents can splash out on weddings and banquets. Moutai is often a guest of honour.

Moutai has succeeded thanks to nationalism, elitism and ageism, in other words—not in spite of this unholy trinity. But it faces risks. The government is its largest shareholder—and a meddlesome one. It appears to want prices to remain stable. Exorbitantly priced booze is at odds with its professed socialist ideals. Yet minority investors—including many foreign funds—lament that Moutai's wholesale price is a third of what it sells for in shops. Raising it could boost the company's profits further. Instead, in what some see as a travesty of corporate governance, its majority owner has plans to set up its own sales channel ...

In the long run, its biggest risk may be millennials. As they grow older, health concerns, work-life balance and the desire for more wholesome pursuits than binge-drinking may curb the"Ganbei!" toasting culture [heavy drinking] on which so much of the demand for Moutai rests. For the time being, though, the party goes on.

13. The phrase "would make it an invention to rival gunpowder" has been used in the passage in a sense that is

(A) literal
(B) substantive
(C) metaphorical
(D) synonymical

14. Which one of the following is both a reason for Moutai's success as well as a possible threat to that success?

(A) Chinese love of liquor filled celebration.
(B) Government involvement in its business.
(C) Its appeal to the rich.
(D) Its appeal to the older age group.

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15. In the context of the passage, it is most likely that the author refers to Moutai's marketing strategy as "the unholy trinity" because

(A) there is nothing holy about marketing techniques for liquor.
(B) it profits from Chinese nationalist feelings.
(C) it contradicts the Western strategy of marketing.
(D) it exposes the firm to long term risks.

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16. In the context of the passage, we can infer that to succeed in the liquor industry in China, a marketing firm must consider all of the following factors affecting the Chinese liquor market EXCEPT that

(A) there is money to be made from marketing to the middle class.
(B) the government may control the pricing of products.
(C) there are few competitors to meet the demands of high end liquor consumers.
(D) the competition for winning over the middle class is very stiff.

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17. **There is a sentence that is missing in the paragraph below. Look at the paragraph and decide where (option 1, 2, 3, or 4) the following sentence would best fit. Sentence**: Taken outside the village of Trang Bang on June 8, 1972, the picture captured the trauma and indiscriminate violence of a conflict that claimed, by some estimates, a million or more civilian lives. **Paragraph**: The horrifying photograph of children fleeing a deadly napalm attack has become a defining image not only of the Vietnam War but the 20th century. ___(1)___. Dark smoke billowing behind them, the young subjects' faces are painted with a mixture of terror, pain and confusion. ___(2)___. Soldiers from the South Vietnamese Army's 25th Division follow helplessly behind. ___(3)___. The picture was officially titled "The Terror of War," but the photo is better known by the nickname given to the naked 9-year-old at its centre: "Napalm Girl". ___(4)___.

(A) Option 4
(B) Option 1
(C) Option 3
(D) Option 2

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18. **The passage given below is followed by four alternate summaries. Choose the option that best captures the essence of the passage.** Lyric poetry is a genre of private meditation rather than public commitment. The impulse in Marxism toward changing a society deemed unacceptable in its basic design would seem to place demands on lyric poetry that such poetry, with its tendency toward the personal, the small scale, and the idiosyncratic, could never answer. There is within Marxism, however, also a strand of thought that would locate in lyric poetry alternative modes of perception and description that call forth a vision of worlds at odds with a repressive reality or that draw attention to the workings of ideology within the hegemonic culture. The poetic imagination may indeed deflect larger social concerns, but it may also be implicitly critical and utopian.

(A) The focus of lyric poetry is largely personal while that of Marxism is bringing change in society. Unless the difference is resolved, poetry will remain largely utopian.

(B) Marxism has internal contradictions due to which one strand of Marxism sees no merit in lyric poetry while another appreciates the alternative modes of perception in poetry.

(C) The focus of lyric poetry as personal may not seem compatible with Marxism. However, it is possible to envisage lyric poetry as a symbol of resistance against an oppressive culture.

(D) Marxism makes unreasonable demands on lyric poetry. However, lyric poetry has its own merits that are largely ignored by Marxism due to its personal nature.

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19. **There is a sentence that is missing in the paragraph below. Look at the paragraph and decide where (option 1, 2, 3, or 4) the following sentence would best fit. Sentence**: Many have had to leave their homes behind, with more than 1.3 million people being displaced due to the drought. **Passage**: Somalia has been dealing with an enormous humanitarian catastrophe, driven by the longest and most severe drought the country has experienced in at least 40 years. ___(1)___. Five consecutive rainy seasons have failed, causing more than 8 million people - almost half of the country's population - to experience acute food insecurity. ___(2)___. More than 43,000 people are believed to have lost their lives, with half of the lives lost likely being children under five. The damage the drought has caused is far-reaching. ___(3)___. Farmers have lost all their agricultural income, while pastoralists have lost more than 3 million livestock, impoverishing entire communities, and leaving them on the brink of famine. ___(4)___. Some, like the pastoralists, may never be able to go back as their livelihoods have been irreversibly wiped out.

(A) Option 4

(B) Option 2

(C) Option 3

(D) Option 1

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20. **There is a sentence that is missing in the paragraph below. Look at the paragraph and decide where (option 1, 2, 3, or 4) the following sentence would best fit. Sentence**: This reality is putting stress on employees who have to pay for transport, desk lunches, more childcare, clothing and that after-work socialisation - costs they haven't incurred for nearly two years. **Paragraph**: ___(1)___. Prices are rising at their fastest rate in 40 years; consequently, return-to-office-related costs have shot up - think petrol and food, for instance.___(2)___. Yet wages haven't kept up with inflation - even despite the salary growth many workers have enjoyed during a favourable pandemic labour market. ___(3)___.This is especially jarring for workers who were able to save during remote work, when these expenditures weren't a factor. ___(4)___. In April 2022, Umus, a London university lecturer, told BBC Worklife that they were spending nearly a quarter of what they made every day on return-to-work costs.

(A) Option 4

(B) Option 3

(C) Option 2

(D) Option 1

Questions 21 to 24

The passage below is accompanied by four questions. Based on the passage, choose the best answer for each question.

Fears of artificial intelligence (AI) have haunted humanity since the very beginning of the computer age. Hitherto, these fears focused on machines using physical means to kill, enslave or replace people. But over the past couple of years, new AI tools have emerged that threaten the survival of human civilisation from an unexpected direction. AI has gained some remarkable abilities to manipulate and generate language, whether with words, sounds or images. AI has thereby hacked the operating system of our civilisation.

Language is the stuff almost all human culture is made of. Human rights, for example, aren't

inscribed in our DNA. Rather, they are cultural artefacts we created by telling stories and writing laws. Gods aren't physical realities. Rather, they are cultural artefacts we created by inventing myths and writing scriptures….What would happen once a non-human intelligence becomes better than the average human at telling stories, composing melodies, drawing images, and writing laws and scriptures? When people think about Chatgpt and other new AI tools, they are often drawn to examples like schoolchildren using AI to write their essays. What will happen to the school system when kids do that? But this kind of question misses the big picture. Forget about school essays. Think of the next American presidential race in 2024, and try to imagine the impact of AI tools that can be made to mass-produce political content, fake news stories and scriptures for new cults…

Through its mastery of language, AI could even form intimate relationships with people, and use the power of intimacy to change our opinions and worldviews. Although there is no indication that AI has any consciousness or feelings of its own, to foster fake intimacy with humans, it is enough if the AI can make them feel emotionally attached to it….

What will happen to the course of history when AI takes over culture, and begins producing stories, melodies, laws and religions? Previous tools like the printing press and radio helped spread the cultural ideas of humans, but they never created new cultural ideas of their own. AI is fundamentally different. AI can create completely new ideas, completely new culture….Of course, the new power of AI could be used for good purposes as well. I won't dwell on this because the people who develop AI talk about it enough….

We can still regulate the new AI tools, but we must act quickly. Whereas nukes cannot invent more powerful nukes, AI can make exponentially more powerful AI.… Unregulated AI deployments would create social chaos, which would benefit autocrats and ruin democracies. Democracy is a conversation, and conversations rely on language. When AI hacks language, it could destroy our ability to have meaningful conversations, thereby destroying democracy …. And the first regulation I would suggest is to make it mandatory for AI to disclose that it is an AI. If I am having a conversation with someone, and I cannot tell whether it is a human or an AI—that's the end of democracy. This text has been generated by a human. Or has it?

21. The author identifies all of the following as dire outcomes of the capture of language by AI EXCEPT that it could

(A) spawn a completely new culture through its ability to create new ideas and opinions.

(B) out-strip human creativity and endeavours in the spheres such as art and music and,in the formulation of laws.

(C) eventually subvert democratic processes through the mass creation and spread offake political content and news.

(D) apply its mastery of language to create strong emotional ties which could exacerbate the polarization of political views.

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22. The author terms language "the operating system of our civilization" for all the following reasons EXCEPT that it

(A) can influence political views and opinions as it engenders close emotional ties among people.

(B) is the basis of AI tools like ChatGPT which can be used to generate academic content and opinion.

(C) is fundamental to the articulation and spread of human values and culture in our society.

(D) has laid the foundation for the creation of cultural artefacts through writing and telling of stories.

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23. We can infer that the author is most likely to agree with which of the following statements?

(A) People's fears of the dangers of students using ChatGPT and other new AI tools are unfounded.

(B) The commonly expressed fear that future AI developments will fatally harm humans is unfounded.

(C) Apart from its drawbacks, AI tools have been beneficial in boosting technological and industrial advance worldwide.

(D) One of the biggest casualties from the spread of unregulated AI is likely to be the democratic process.

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24. The tone of the passage could best be described as

(A) cautionary, because the author lays out some adverse effects of the proliferation of unregulated AI tools.

(B) prescient, as the author analyses the future impact of the use of new AI tools on crucial areas of our society and culture.

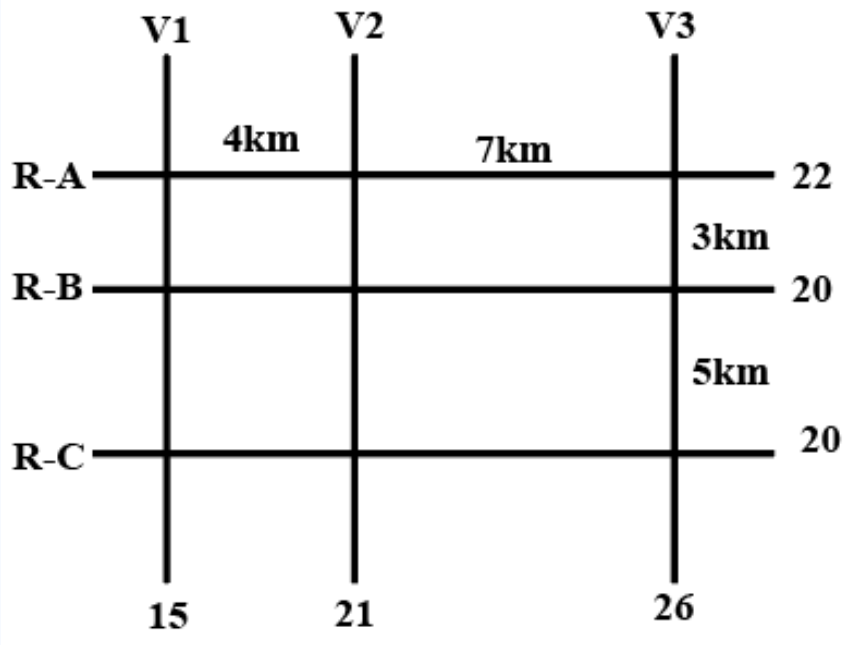
(C) alarmist, because the passage discusses scenarios of the influence of new AI tools on language and human emotions.

(D) quizzical, as the passage poses several questions, concluding with the question of whether or not the passage content has been generated by AI.

Questions 25 to 29

The figure below shows a network with three parallel roads represented by horizontal lines R-A, R-B, and R-C and another three parallel roads represented by vertical lines V1, V2, and V3. The figure also shows the distance (in km) between two adjacent intersections.Six ATMs are placed at six of the nine road intersections. Each ATM has a distinct integer cash requirement (in Rs. Lakhs), and the numbers at the end of each line in the figure indicate the total cash requirements of all ATMs placed on the corresponding road. For example, the total cash requirement of the ATM(s) placed on road R-A is Rs. 22 Lakhs.

The following additional information is known.
1. The ATMs with the minimum and maximum cash requirements of Rs. 7 Lakhs and Rs. 15 Lakhs are placed on the same road.
2. The road distance between the ATM with the second highest cash requirement and the ATM located at the intersection of R-C and V3 is 12 km.



25. Which of the following statements is correct?

(A) There is no ATM placed at the (R-C, V2) intersection.

(B) The ATM placed at the (R-C, V2) intersection has a cash requirement of Rs. 9 Lakhs.

(C) The ATM placed at the (R-C, V2) intersection has a cash requirement of Rs. 8 Lakhs.

(D) The cash requirement of the ATM placed at the (R-C, V2) intersection cannot be uniquely determined.

26. How many ATMs have cash requirements of Rs. 10 Lakhs or more?

Type in the answer.

27. Which of the following two statements is/are DEFINITELY true? Statement A: Each of R-A, R-B, and R-C has two ATMs. Statement B: Each of V1, V2, and V3 has two ATMs.

(A) Only Statement A
(B) Neither Statement A nor Statement B
(C) Only Statement B
(D) Both Statement A and Statement B

28. What best can be said about the road distance (in km) between the ATMs having the second highest and the second lowest cash requirements?

(A) 4 km
(B) 7 km
(C) 5 km
(D) Either 4 km or 7 km

29. What is the number of ATMs whose locations and cash requirements can both be uniquely determined?

Type in the answer.

Questions 30 to 33

The table given below shows the amount, in grams, of carbohydrate, protein, fat and all other nutrients, per 100 grams of nutrients in seven food grains. The first column shows the food grain category and the second column its codename. The table has some missing values.

Food grain Category	Codename of the food grain	Composition per hundred grams of nutrients in the food grains			
		Carbohydrate	Protein	Fat	Other nutrients
Cereal	C1			0	12
	C2			3	10
Millet	M1	62	10		
	M2			7	16
	M3	56		12	
Pseudo-cereal	P1	66			10
	P2		14		8

The following additional facts are known.
1. Both the pseudo-cereals had higher amounts of carbohydrate as well as higher amounts of protein than any millet.
2. Both the cereals had higher amounts of carbohydrate than any pseudo-cereal.
3. All the missing values of carbohydrate amounts (in grams) for all the food grains are non-zero multiples of 5.
4. All the missing values of protein, fat and other nutrients amounts (in grams) for all the food grains are non-zero multiples of 4.
5. P1 contained double the amount of protein that M3 contains.

30. How many foodgrains had a higher amount of carbohydrate per 100 grams ofnutrients than M1?

Type in the answer.

31. How many grams of protein were there in 100 grams of nutrients in M2?

Type in the answer.

32. How many grams of other nutrients were there in 100 grams of nutrients in M3?

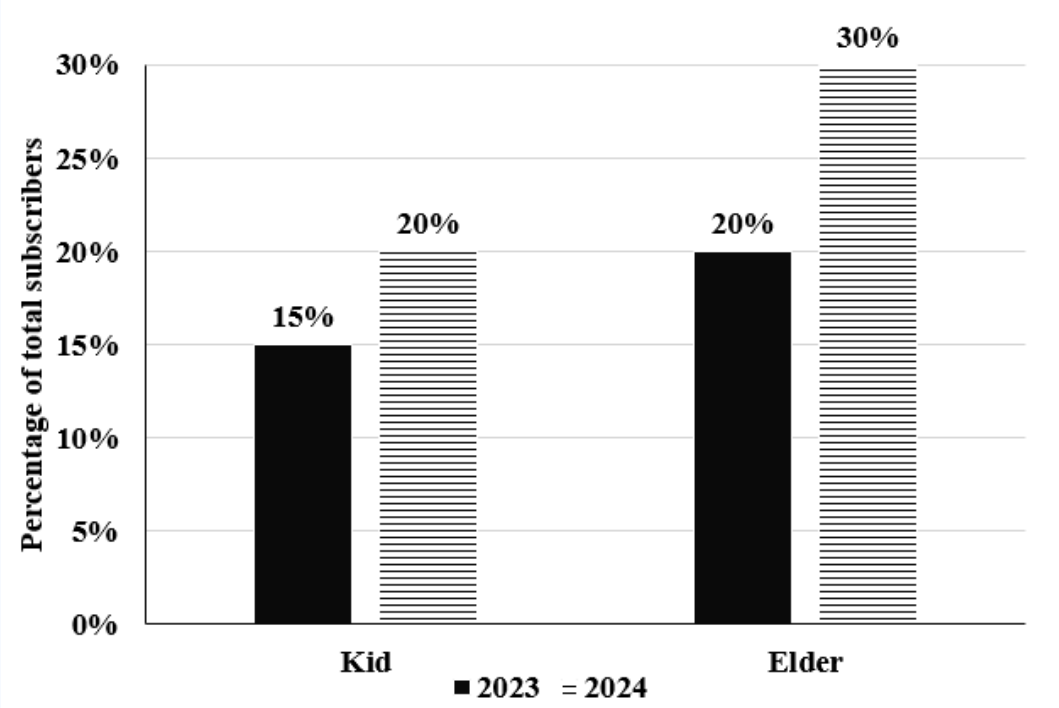
Type in the answer.

33. What is the median of the number of grams of protein in 100 grams of nutrients among these food grains?

Type in the answer.

Questions 34 to 37

Comprehension:
Over the top (OTT) subscribers of a platform are segregated into three categories: i) Kid, ii)Elder, and iii) Others. Some of the subscribers used one app and the others used multiple apps to access the platform. The figure below shows the percentage of the total number of subscribers in 2023 and 2024 who belong to the 'Kid' and 'Elder' categories.



The following additional facts are known about the numbers of subscribers.
1. The total number of subscribers increased by 10% from 2023 to 2024.
2. In 2024, 1/2 of the subscribers from the 'Kid' category and 2/3 of the subscribers from the 'Elder' category subscribers use one app.
3. In 2023, the number of subscribers from the 'Kid' category who used multiple apps was the same as the number of subscribers from the 'Elder' category who used one app.
4. 10,000 subscribers from the 'Kid' category used one app and 15,000 subscribers from the 'Elder' category used multiple apps in 2023.

34. How many subscribers belonged to the 'Others' category in 2024?

(A) Cannot be determined
(B) 65000
(C) 55000
(D) 45000

35. What percentage of subscribers in the 'Kid' category used multiple apps in 2023?

(A) 33.33%
(B) 5.00%
(C) 25.50%
(D) 50.00%

36. What was the percentage increase in the number of subscribers in the 'Elder' categoryfrom 2023 to 2024?

(A) 60%
(B) 50%
(C) 65%
(D) 40%

37. What could be the minimum percentage of subscribers who used multiple apps in 2024?

(A) 16.5%
(B) 20.0%
(C) 10.0%
(D) 22.00%

Questions 38 to 41

Out of 10 countries -- Country 1 through Country 10 -- Country 9 has the highest gross domestic product (GDP), and Country 10 has the highest GDP per capita. GDP per capita is the GDP of a country divided by its population. The table below provides the following data about Country 1 through Country 8 for the year 2024.

- Column 1 gives the country's identity.
- Column 2 gives the country's GDP as a fraction of the GDP of Country 9.
- Column 3 gives the country's GDP per capita as a fraction of the GDP per capita of Country10.
- Column 4 gives the country's annual GDP growth rate.
- Column 5 gives the country's annual population growth rate.

Country	GDP	GDP per capita	GDP growth rate	Population growth rate
Country 1	0.15	0.41	0.2%	-0.12%
Country 2	0.14	0.25	0.9%	-0.41%
Country 3	0.13	0.02	6.5%	0.70%
Country 4	0.12	0.38	0.5%	0.49%
Country 5	0.1	0.36	0.7%	0.31%
Country 6	0.08	0.08	3.2%	0.61%
Country 7	0.08	0.3	0.7%	-0.11%
Country 8	0.07	0.41	1.2%	0.71%

Assume that the GDP growth rates and population growth rates of the countries will remain constant for the next three years.

38. Which one among the countries 1 through 8, has the smallest population in 2024?

(A) Country 8
(B) Country 3
(C) Country 7
(D) Country 5

39. The ratio of Country 4's GDP to Country 5's GDP in 2026 will be closest to

(A) 1.195
(B) 0.963
(C) 1.314
(D) 1.032

40. Which one among the countries 1, 4, 5, and 7 will have the largest population in 2027?

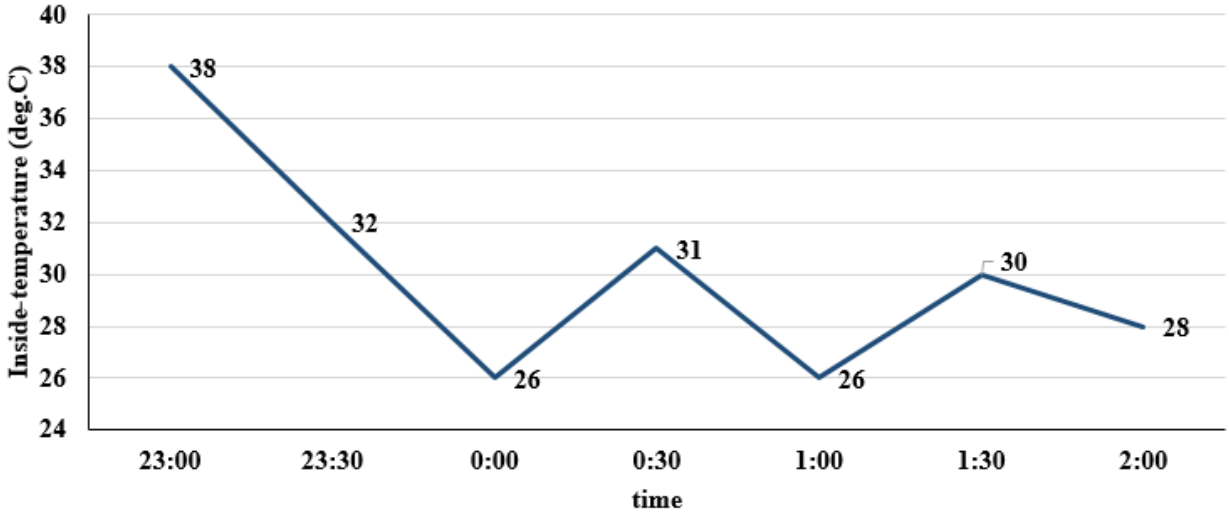
(A) Country 1
(B) Country 5
(C) Country 7
(D) Country 4

41. For how many countries among Country 1 through Country 8 will the GDP per capita in 2027 be lower than that in 2024?

Type in the answer.

Questions 42 to 46

The air-conditioner (AC) in a large room can be operated either in REGULAR mode or in POWER mode to reduce the temperature.
If the AC operates in REGULAR mode, then it brings down the temperature inside the room(called inside temperature) at a constant rate to the set temperature in 1 hour. If it operates in POWER mode, then this is achieved in 30 minutes.
If the AC is switched off, then the inside temperature rises at a constant rate so as to reach the temperature outside at the time of switching off in 1 hour.
The temperature outside has been falling at a constant rate from 7 pm onward until 3 am on a particular night. The following graph shows the inside temperature between 11 pm (23:00)and 2 am (2:00) that night.



The following facts are known about the AC operation that night.
• The AC was turned on for the first time that night at 11 pm (23:00).
• The AC setting was changed (including turning it on/off, and/or setting different temperatures) only at the beginning of the hour or at 30 minutes after the hour.
• The AC was used in POWER mode for longer duration than in REGULAR mode during this 3-hour period.

42. How many times the AC must have been turned off between 11:01 pm and 1:59 am?

(A) cannot be determined
(B) 2
(C) 0
(D) 1

43. What was the temperature outside, in degree Celsius, at 1 am?

Type in the answer.

44. What was the temperature outside, in degree Celsius, at 9 pm?

Type in the answer.

45. What best can be concluded about the number of times the AC must have either been turned on or the AC temperature setting been altered between 11:01 pm and 1:59 am?

(A) More than 3

(B) Either 2 or 3

(C) Exactly 2

(D) Exactly 3

46. What was the maximum difference between temperature outside and inside temperature, in degree Celsius, between 11:01 pm and 1:59 am?

Type in the answer.

47. In a group of 250 students, the percentage of girls was at least 44% and at most 60%.The rest of the students were boys. Each student opted for either swimming or running or both. If 50% of the boys and 80% of the girls opted for swimming while 70%of the boys and 60% of the girls opted for running, then the minimum and maximum possible number of students who opted for both swimming and running, are

(A) 72 and 88, respectively
(B) 75 and 96, respectively
(C) 72 and 80, respectively
(D) 75 and 90, respectively

---

48. If $(a+b\sqrt{3})^2 = 52+30\sqrt{3}$, where a and b are natural numbers, then $a+b$ equals

(A) 7
(B) 8
(C) 9
(D) 10

---

49. The average of three distinct real numbers is 28. If the smallest number is increased by 7 and the largest number is reduced by 10, the order of the numbers remains unchanged, and the new arithmetic mean becomes 2 more than the middle number, while the difference between the largest and the smallest numbers becomes 64.Then, the largest number in the original set of three numbers is

Type in the answer.

---

50. If 10^{68} is divided by 13, the remainder is

(A) 5
(B) 8
(C) 9
(D) 4

---

51. Sam can complete a job in 20 days when working alone. Mohit is twice as fast as Sam and thrice as fast as Ayna in the same job. They undertake a job with an arrangement where Sam and Mohit work together on the first day, Sam and Ayna on the second day, Mohit and Ayna on the third day, and this three-day pattern is repeated till the work gets completed. Then, the fraction of total work done by Sam is

(A) $\frac{1}{20}$
(B) $\frac{3}{10}$
(C) $\frac{1}{5}$
(D) $\frac{3}{20}$

---

52. A circular plot of land is divided into two regions by a chord of length $10\sqrt{3}$ meters such that the chord subtends an angle of 120° at the center. Then, the area, in square meters, of the smaller region is

(A) $20\left(\frac{4\pi}{3}+\sqrt{3}\right)$
(B) $25\left(\frac{4\pi}{3}+\sqrt{3}\right)$
(C) $20\left(\frac{4\pi}{3}-\sqrt{3}\right)$
(D) $25\left(\frac{4\pi}{3}-\sqrt{3}\right)$

---

53. Consider the sequence $t_1 = 1, t_2 = -1$ and $t_n = \left(\frac{n-3}{n-1}\right) t_{n-2}$ for $n \geq 3$. Then, the value of the sum $\frac{1}{t_2}+\frac{1}{t_4}+\frac{1}{t_6}+\ldots\ldots+\frac{1}{t_{2022}}+\frac{1}{t_{2024}}$, is

(A) -1024144
(B) -1022121
(C) -1023132
(D) -1026169

54. The number of distinct real values of x, satisfying the equation $max\{x,2\} - min\{x,2\} = |x+2| - |x-2|$, is

Type in the answer.

55. Aman invests Rs 4000 in a bank at a certain rate of interest, compounded annually. If the ratio of the value of the investment after 3 years to the value of the investment after 5 years is 25 : 36, then the minimum number of years required for the value of the investment to exceed Rs 20000 is

Type in the answer.

56. The sum of all distinct real values of x that satisfy the equation $10^x + \frac{4}{10^x} = \frac{81}{2}$, is

(A) $2\log_{10} 2$
(B) $4\log_{10} 2$
(C) $\log_{10} 2$
(D) $3\log_{10} 2$

57. A train travelled a certain distance at a uniform speed. Had the speed been 6 km per hour more, it would have needed 4 hours less. Had the speed been 6 km per hour less, it would have needed 6 hours more. The distance, in km, travelled by the train is

(A) 720
(B) 800
(C) 780
(D) 640

58. If $3^a = 4, 4^b = 5, 5^c = 6, 6^d = 7, 7^e = 8$ and $8^f = 9$, then the value of the product abcdef is

Type in the answer.

59. Gopi marks a price on a product in order to make 20% profit. Ravi gets 10% discount on this marked price, and thus saves Rs 15. Then, the profit, in rupees, made by Gopi by selling the product to Ravi, is

(A) 10
(B) 25
(C) 15
(D) 20

60. A certain amount of water was poured into a 300 litre container and the remaining portion of the container was filled with milk. Then an amount of this solution was taken out from the container which was twice the volume of water that was earlier poured into it, and water was poured to refill the container again. If the resulting solution contains 72% milk, then the amount of water, in litres, that was initially poured into the container was

Type in the answer.

61. A regular octagon ABCDEFGH has sides of length 6 cm each. Then the area, in sq. cm, of the square ACEG is

(A) $72(2+\sqrt{2})$
(B) $36(1+\sqrt{2})$
(C) $72(1+\sqrt{2})$
(D) $36(2+\sqrt{2})$

62. The number of distinct integer solutions (x, y) of the equation $| x + y | + | x - y | = 2$, is

Type in the answer.

---

63. For any non-zero real number x, let $f(x) + 2f\left(\frac{1}{x}\right) = 3x$. Then, the sum of all possible values of x for which $f(x) = 3$, is

(A) 3
(B) -2
(C) -3
(D) 2

---

64. For some constant real numbers p, k and a, consider the following system of linear equations in x and y: px - 4y = 2 3x + ky= a A necessary condition for the system to have no solution for (x, y), is

(A) $ap + 6 = 0$
(B) $2a + k \neq 0$
(C) $ap - 6 = 0$
(D) $kp + 12 \neq 0$

---

65. Rajesh and Vimal own 20 hectares and 30 hectares of agricultural land, respectively, which are entirely covered by wheat and mustard crops. The cultivation area of wheat and mustard in the land owned by Vimal are in the ratio of 5 : 3. If the total cultivation area of wheat and mustard are in the ratio 11 : 9, then the ratio of cultivation area of wheat and mustard in the land owned by Rajesh is

(A) 4 : 3
(B) 7 : 9
(C) 3 : 7
(D) 1 : 1

---

66. The midpoints of sides AB, BC, and AC in ΔABC are M, N, and P, respectively. The medians drawn from A, B, and C intersect the line segments MP, MN and NP at X, Y, and Z, respectively. If the area of ΔABC is 1440 sq cm, then the area, in sq cm, of $\triangle XYZ$ is

Type in the answer.

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67. The number of all positive integers up to 500 with non-repeating digits is

Type in the answer.

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68. After two successive increments, Gopal's salary became 187.5% of his initial salary. If the percentage of salary increase in the second increment was twice of that in the first increment, then the percentage of salary increase in the first increment was

(A) 30
(B) 27.5
(C) 25
(D) 20

- End of Question Paper -
