CAT 2021 Slot 2 Question Paper

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

Time Allowed: 2 Hours | **66 Questions** | **Maximum Marks: 198**

General Instructions

(i) This paper contains **66 questions** from **CAT 2021 Slot 2**, held on **28 November 2021**. The original examination was a **computer-based test** with a **120-minute** duration.

(ii) The question groups appear in their original sequence: **Verbal Ability and Reading Comprehension** (24 questions); **Data Interpretation and Logical Reasoning** (20 questions); **Quantitative Ability** (22 questions).

(iii) Each section is timed separately: **40 minutes per section**. A candidate cannot switch between sections during the test.

(iv) The paper has **multiple choice questions (MCQs)**, each with four options and one correct answer, and **Type In The Answer (TITA)** questions.

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

(vi) For TITA questions, enter the answer in the space provided. An on-screen calculator was available in the original test.

Verbal Ability and Reading Comprehension · Questions 1-24

1. 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. The care with which philosophers examine arguments for and against forms of biotechnology makes this an excellent primer on formulating and assessing moral arguments.
2. Although most people find at least some forms of genetic engineering disquieting, it is not easy to articulate why: what is wrong with re-engineering our nature?
3. Breakthroughs in genetics present us with the promise that we will soon be able to prevent a host of debilitating diseases, and the predicament that our newfound genetic knowledge may enable us to enhance our genetic traits.
4. To grapple with the ethics of enhancement, we need to confront questions that verge on theology, which is why modern philosophers and political theorists tend to shrink from them.
5. One argument is that the drive for human perfection through genetics is objectionable as it represents a bid for mastery that fails to appreciate the gifts of human powers and achievements.

Type in the answer.

Questions 2 to 5

The passage below is accompanied by a set of questions. Choose the best answer to each question.

It has been said that knowledge, or the problem of knowledge, is the scandal of philosophy. The scandal is philosophy's apparent inability to show how, when and why we can be sure that we know something or, indeed, that we know anything. Philosopher Michael Williams writes: 'Is it possible to obtain knowledge at all? This problem is pressing because there are powerful arguments, some very ancient, for the conclusion that it is not . . . Scepticism is the skeleton in Western rationalism's closet'. While it is not clear that the scandal matters to anyone but philosophers, philosophers point out that it should matter to everyone, at least given a certain conception of knowledge. For, they explain, unless we can ground our claims to knowledge as such, which is to say, distinguish it from mere opinion, superstition, fantasy, wishful thinking, ideology, illusion or delusion, then the actions we take on the basis of presumed knowledge - boarding an airplane, swallowing a pill, finding someone guilty of a crime - will be irrational and unjustifiable.

That is all quite serious-sounding but so also are the rattlings of the skeleton: that is, the sceptic's contention that we cannot be sure that we know anything - at least not if we think of knowledge as something like having a correct mental representation of reality, and not if we think of reality as something like things-as-they-are-in-themselves, independent of our perceptions, ideas or descriptions. For, the sceptic will note, since reality, under that conception of it, is outside our ken (we cannot catch a glimpse of things-in-themselves around the corner of our own eyes; we cannot form an idea of reality that floats above the processes of our conceiving it), we have no way to compare our mental representations with things-as-they-are-in-themselves and therefore no way to determine whether they are correct or incorrect. Thus the sceptic may repeat (rattling loudly), you cannot be sure you 'know' something or anything at all - at least not, he may add (rattling softly before disappearing), if that is the way you conceive 'knowledge'.

There are a number of ways to handle this situation. The most common is to ignore it. Most people outside the academy - and, indeed, most of us inside it - are unaware of or unperturbed by the philosophical scandal of knowledge and go about our lives without too many epistemic anxieties. We hold our beliefs and presumptive knowledges more or less confidently, usually depending on how we

acquired them (I saw it with my own eyes; I heard it on Fox News; a guy at the office told me) and how broadly and strenuously they seem to be shared or endorsed by various relevant people: experts and authorities, friends and family members, colleagues and associates. And we examine our convictions more or less closely, explain them more or less extensively, and defend them more or less vigorously, usually depending on what seems to be at stake for ourselves and/or other people and what resources are available for reassuring ourselves or making our beliefs credible to others (look, it's right here on the page; add up the figures yourself; I happen to be a heart specialist).

2. The author discusses all of the following arguments in the passage, EXCEPT:

(A) sceptics believe that we can never fully know anything, if by "knowing" we mean knowledge of a reality that is independent of the knower.

(B) if we cannot distinguish knowledge from opinion or delusion, we will not be able to justify our actions.

(C) the best way to deal with scepticism about the veracity of knowledge is to ignore it.

(D) philosophers maintain that the scandal of philosophy should be of concern to everyone.

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3. ". . . we cannot catch a glimpse of things-in-themselves around the corner of our own eyes; we cannot form an idea of reality that floats above the processes of our conceiving it . . ." Which one of the following statements best reflects the argument being made in this sentence?

(A) Our knowledge of reality floats above our subjective perception of it.

(B) If the reality of things is independent of our eyesight, logically we cannot perceive our perception.

(C) Our knowledge of reality cannot be merged with our process of conceiving it.

(D) If the reality of things is independent of our perception, logically we cannot perceive that reality.

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4. According to the last paragraph of the passage, "We hold our beliefs and presumptive knowledges more or less confidently, usually depending on" something. Which one of the following most broadly captures what we depend on?

(A) How we come to hold them; how widely they are held in our social circles.

(B) All of the options listed here.

(C) How much of a stake we have in them; what resources there are to support them.

(D) Remaining outside the academy; ignoring epistemic anxieties.

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5. The author of the passage is most likely to support which one of the following statements?

(A) The confidence with which we maintain something to be true is usually independent of the source of the alleged truth.

(B) The scandal of philosophy is that we might not know anything at all about reality if we think of reality as independent of our perceptions, ideas or descriptions.

(C) The actions taken on the basis of presumed knowledge are rational and justifiable if we are confident that that knowledge is widely held.

(D) For the sceptic, if we think of reality as independent of our perceptions, ideas or descriptions, we should aim to know that reality independently too.

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6. The four sentences (labelled 1, 2, 3 and 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. The US has long maintained that the Northwest Passage is an international strait through which its commercial and military vessels have the right to pass without seeking Canada's permission.
2. Canada, which officially acquired the group of islands forming the Northwest Passage in 1880, claims sovereignty over all the shipping routes through the Passage.
3. The dispute could be transitory, however, as scientists speculate that the entire Arctic Ocean will soon be ice-free in summer, so ship owners will not have to ask for permission to sail through any of the Northwest Passage routes.
4. The US and Canada have never legally settled the question of access through the Passage, but have an agreement whereby the US needs to seek Canada's consent for any transit.

Type in the answer.

Questions 7 to 10

The passage below is accompanied by a set of questions. Choose the best answer to each question.

It's easy to forget that most of the world's languages are still transmitted orally with no widely established written form. While speech communities are increasingly involved in projects to protect their languages - in print, on air and online - orality is fragile and contributes to linguistic vulnerability. But indigenous languages are about much more than unusual words and intriguing grammar: They function as vehicles for the transmission of cultural traditions, environmental understandings and knowledge about medicinal plants, all at risk when elders die and livelihoods are disrupted.

Both push and pull factors lead to the decline of languages. Through war, famine and natural disasters, whole communities can be destroyed, taking their language with them to the grave, such as the indigenous populations of Tasmania who were wiped out by colonists. More commonly, speakers live on but abandon their language in favor of another vernacular, a widespread process that linguists refer to as "language shift" from which few languages are immune. Such trading up and out of a speech form occurs for complex political, cultural and economic reasons - sometimes voluntary for economic and educational reasons, although often amplified by state coercion or neglect. Welsh, long stigmatized and disparaged by the British state, has rebounded with vigor.

Many speakers of endangered, poorly documented languages have embraced new digital media with excitement. Speakers of previously exclusively oral tongues are turning to the web as a virtual space for languages to live on. Internet technology offers powerful ways for oral traditions and cultural practices to survive, even thrive, among increasingly mobile communities. I have watched as videos of traditional wedding ceremonies and songs are recorded on smartphones in London by Nepali migrants, then uploaded to YouTube and watched an hour later by relatives in remote Himalayan villages . . .

Globalization is regularly, and often uncritically, pilloried as a major threat to linguistic diversity. But in fact, globalization is as much process as it is ideology, certainly when it comes to language. The real forces behind cultural homogenization are unbending beliefs, exchanged through a globalized delivery system, reinforced by the historical monolingualism prevalent in much of the West.

Monolingualism - the condition of being able to speak only one language - is regularly accompanied by a deep-seated conviction in the value of that language over all others. Across the largest economies that make up the G8, being monolingual is still often the norm, with multilingualism appearing unusual and even somewhat exotic. The monolingual mindset stands in sharp contrast to the lived reality of most the world, which throughout its history has been more multilingual than

unilingual. Monolingualism, then, not globalization, should be our primary concern.

Multilingualism can help us live in a more connected and more interdependent world. By widening access to technology, globalization can support indigenous and scholarly communities engaged in documenting and protecting our shared linguistic heritage. For the last 5,000 years, the rise and fall of languages was intimately tied to the plow, sword and book. In our digital age, the keyboard, screen and web will play a decisive role in shaping the future linguistic diversity of our species.

7. The author lists all of the following as reasons for the decline or disappearance of a language EXCEPT:

(A) a catastrophic event that entirely eliminates a people and their culture.

(B) governments promoting certain languages over others.

(C) the focus on only a few languages as a result of widespread internet use.

(D) people shifting away from their own language to study or work in another language.

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8. We can infer all of the following about indigenous languages from the passage EXCEPT that:

(A) they are repositories of traditional knowledge about the environment and culture.

(B) they are in danger of being wiped out as most can only be transmitted orally.

(C) people are increasingly working on documenting these languages.

(D) their vocabulary and grammatical constructs have been challenging to document.

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9. From the passage, we can infer that the author is in favour of:

(A) greater multilingualism.

(B) “language shifts” across languages.

(C) cultural homogenisation.

(D) an expanded state role in the preservation of languages.

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10. The author mentions the Welsh language to show that:

(A) efforts to integrate Welsh speakers in the English-speaking fold have been fruitless.

(B) languages can revive even after their speakers have gone through a “language shift”.

(C) vulnerable languages can rebound with state effort.

(D) while often pilloried, globalisation can, in fact, support linguistic revival.

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11. **The passage given below is followed by four alternate summaries. Choose the option that best captures the essence of the passage.** The unlikely alliance of the incumbent industrialist and the distressed unemployed worker is especially powerful amid the debris of corporate bankruptcies and layoffs. In an economic downturn, the capitalist is more likely to focus on costs of the competition emanating from free markets than on the opportunities they create. And the unemployed worker will find many others in a similar condition and with anxieties similar to his, which will make it easier for them to organize together. Using the cover and the political organization provided by the distressed, the capitalist captures the political agenda.

(A) In an economic downturn, the capitalists use the anxieties of the unemployed and their political organisation to set the political agenda to suit their economic interests.

(B) The purpose of an unlikely alliance between the industrialist and the unemployed during an economic downturn is to stifle competition in free markets.

(C) An economic downturn creates competition because of which the capitalists capture the political agenda created by the political organisation provided by the unemployed.

(D) An unlikely alliance of the industrialist and the unemployed happens during an economic downturn in which they come together to unite politically and capture the political agenda.

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12. The four sentences (labelled 1, 2, 3 and 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. Look forward a few decades to an invention which can end the energy crisis, change the global economy and curb climate change at a stroke: commercial fusion power.
2. To gain meaningful insights, logic has to be accompanied by asking probing questions of nature through controlled tests, precise observations and clever analysis.
3. The greatest of all inventions is the über-invention that has provided the insights on which others depend: the modern scientific method.
4. This invention is inconceivable without the scientific method; it will rest on the application of a diverse range of scientific insights, such as the process transforming hydrogen into helium to release huge amounts of energy.

Type in the answer.

Questions 13 to 16

The passage below is accompanied by a set of questions. Choose the best answer to each question.

Many people believe that truth conveys power. . . . Hence sticking with the truth is the best strategy for gaining power. Unfortunately, this is just a comforting myth. In fact, truth and power have a far more complicated relationship, because in human society, power means two very different things.

On the one hand, power means having the ability to manipulate objective realities: to hunt animals, to construct bridges, to cure diseases, to build atom bombs. This kind of power is closely tied to truth. If you believe a false physical theory, you won't be able to build an atom bomb. On the other hand, power also means having the ability to manipulate human beliefs, thereby getting lots of people to cooperate effectively. Building atom bombs requires not just a good understanding of physics, but also the coordinated labor of millions of humans. Planet Earth was conquered by Homo sapiens rather than by chimpanzees or elephants, because we are the only mammals that can cooperate in very large numbers. And large-scale cooperation depends on believing common stories. But these stories need not be true. You can unite millions of people by making them believe in completely fictional stories about God, about race or about economics. The dual nature of power and truth results in the curious fact that we humans know many more truths than any other animal, but we also believe in much more nonsense. . . .

When it comes to uniting people around a common story, fiction actually enjoys three inherent advantages over the truth. First, whereas the truth is universal, fictions tend to be local. Consequently if we want to distinguish our tribe from foreigners, a fictional story will serve as a far better identity marker than a true story. . . . The second huge advantage of fiction over truth has to do with the handicap principle, which says that reliable signals must be costly to the signaler. Otherwise, they can easily be faked by cheaters. . . . If political loyalty is signaled by believing a true story, anyone

can fake it. But believing ridiculous and outlandish stories exacts greater cost, and is therefore a better signal of loyalty. . . . Third, and most important, the truth is often painful and disturbing. Hence if you stick to unalloyed reality, few people will follow you. An American presidential candidate who tells the American public the truth, the whole truth and nothing but the truth about American history has a 100 percent guarantee of losing the elections. . . . An uncompromising adherence to the truth is an admirable spiritual practice, but it is not a winning political strategy. . . .

Even if we need to pay some price for deactivating our rational faculties, the advantages of increased social cohesion are often so big that fictional stories routinely triumph over the truth in human history. Scholars have known this for thousands of years, which is why scholars often had to decide whether they served the truth or social harmony. Should they aim to unite people by making sure everyone believes in the same fiction, or should they let people know the truth even at the price of disunity?

13. The central theme of the passage is about the choice between:

(A) stories that unite people and those that distinguish groups from each other.

(B) attaining social cohesion and propagating objective truth.

(C) leaders who unknowingly spread fictions and those who intentionally do so.

(D) truth and power.

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14. The author would support none of the following statements about political power EXCEPT that:

(A) there are definite advantages to promoting fiction, but there needs to be some limit to a pervasive belief in myths.

(B) while unalloyed truth is not recommended, leaders should stay as close as possible to it.

(C) manipulating people's beliefs is politically advantageous, but a leader who propagates only myths is likely to lose power.

(D) people cannot handle the unvarnished truth, so leaders retain power by deviating from it.

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15. The author implies that, like scholars, successful leaders:

(A) today know how to create social cohesion better than in the past.

(B) use myths to attain the first type of power.

(C) know how to balance truth and social unity.

(D) need to leverage both types of power to remain in office.

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16. Regarding which one of the following quotes could we argue that the author overemphasises the importance of fiction?

(A) ". . . scholars often had to decide whether they served the truth or social harmony. Should they aim to unite people by making sure everyone believes in the same fiction, or should they let people know the truth . . .?"

(B) "On the one hand, power means having the ability to manipulate objective realities: to hunt animals, to construct bridges, to cure diseases, to build atom bombs."

(C) "Hence sticking with the truth is the best strategy for gaining power. Unfortunately, this is just a comforting myth."

(D) "In fact, truth and power have a far more complicated relationship, because in human society, power means two very different things."

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17. The passage given below is followed by four alternate summaries. Choose the option that best captures the essence of the passage. Creativity is now viewed as the engine of economic progress. Various organizations are devoted to its study and promotion; there are encyclopedias and handbooks surveying creativity research. But this proliferating success has tended to erode creativity's stable identity: it has become so invested with value that it has become impossible to police its meaning and the practices that supposedly identify and encourage it. Many people and organizations committed to producing original thoughts now feel that undue obsession with the idea of creativity gets in the way of real creativity.

(A) The obsession with original thought, how it can be promoted and researched, has made it impossible for people and organizations to define the concept anymore.

(B) The industry that has built up around researching what comprises and encourages creativity has destroyed the creative process itself.

(C) Creativity has proliferated to the extent that is no longer a stable process, and its mutating identity has stifled the creative process.

(D) The value assigned to creativity today has assumed such proportions that the concept itself has lost its real meaning and this is hampering the engendering of real creativity.

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18. 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. But today there is an epochal challenge to rethink and reconstitute the vision and practice of development as a shared responsibility - a sharing which binds both the agent and the audience, the developed world and the developing, in a bond of shared destiny.
2. We are at a crossroads now in our vision and practice of development.
3. This calls for the cultivation of an appropriate ethical mode of being in our lives which enables us to realize this global and planetary situation of shared living and responsibility.
4. Half a century ago, development began as a hope for a better human possibility, but in the last fifty years, this hope has lost itself in the dreary desert of various kinds of hegemonic applications.

Type in the answer.

Questions 19 to 22

The passage below is accompanied by a set of questions. Choose the best answer to each question.

I have elaborated . . . a framework for analyzing the contradictory pulls on [Indian] nationalist ideology in its struggle against the dominance of colonialism and the resolution it offered to those contradictions. Briefly, this resolution was built around a separation of the domain of culture into two spheres—the material and the spiritual. It was in the material sphere that the claims of Western civilization were the most powerful. Science, technology, rational forms of economic organization, modern methods of statecraft—these had given the European countries the strength to subjugate the non-European people . . . To overcome this domination, the colonized people had to learn those superior techniques of organizing material life and incorporate them within their own cultures. . . . But this could not mean the imitation of the West in every aspect of life, for then the very distinction between the West and the East would vanish—the self-identity of national culture would itself be threatened. . . .

The discourse of nationalism shows that the material/spiritual distinction was condensed into an

analogous, but ideologically far more powerful, dichotomy: that between the outer and the inner. . . . Applying the inner/outer distinction to the matter of concrete day-to-day living separates the social space into ghar and bāhir, the home and the world. The world is the external, the domain of the material; the home represents one's inner spiritual self, one's true identity. The world is a treacherous terrain of the pursuit of material interests, where practical considerations reign supreme. It is also typically the domain of the male. The home in its essence must remain unaffected by the profane activities of the material world—and woman is its representation. And so one gets an identification of social roles by gender to correspond with the separation of the social space into ghar and bāhir. . . .

The colonial situation, and the ideological response of nationalism to the critique of Indian tradition, introduced an entirely new substance to [these dichotomies] and effected their transformation. The material/spiritual dichotomy, to which the terms world and home corresponded, had acquired . . . a very special significance in the nationalist mind. The world was where the European power had challenged the non-European people and, by virtue of its superior material culture, had subjugated them. But, the nationalists asserted, it had failed to colonize the inner, essential, identity of the East which lay in its distinctive, and superior, spiritual culture. . . . [I]n the entire phase of the national struggle, the crucial need was to protect, preserve and strengthen the inner core of the national culture, its spiritual essence. . . .

Once we match this new meaning of the home/world dichotomy with the identification of social roles by gender, we get the ideological framework within which nationalism answered the women's question. It would be a grave error to see in this, as liberals are apt to in their despair at the many marks of social conservatism in nationalist practice, a total rejection of the West. Quite the contrary: the nationalist paradigm in fact supplied an ideological principle of selection.

19. Which one of the following explains the "contradictory pulls" on Indian nationalism?

(A) Despite its spiritual superiority, Indian nationalism had to fight against colonial domination.

(B) Despite its fight against colonial domination, Indian nationalism had to borrow from the coloniser in the spiritual sphere.

(C) Despite its scientific and technological inferiority, Indian nationalism had to fight against colonial domination.

(D) Despite its fight against colonial domination, Indian nationalism had to borrow from the coloniser in the material sphere.

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20. On the basis of the information in the passage, all of the following are true about the spiritual/material dichotomy of Indian nationalism EXCEPT that it:

(A) represented a continuation of age-old oppositions in Indian culture.

(B) constituted the premise of the ghar/bāhir dichotomy.

(C) was not as ideologically powerful as the inner/outer dichotomy.

(D) helped in safeguarding the identity of Indian nationalism.

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21. Which one of the following, if true, would weaken the author's claims in the passage?

(A) Indian nationalists rejected the cause of English education for women during the colonial period.

(B) Forces of colonial modernity played an important role in shaping anti-colonial Indian nationalism.

(C) The colonial period saw the hybridisation of Indian culture in all realms as it came in contact with British/European culture.

(D) The Industrial Revolution played a crucial role in shaping the economic prowess of Britain in the eighteenth century.

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22. Which one of the following best describes the liberal perception of Indian nationalism?

(A) Indian nationalism's sophistication resided in its distinction of the material from the spiritual spheres.

(B) Indian nationalist discourses reaffirmed traditional gender roles for Indian women.

(C) Indian nationalism embraced the changes brought about by colonialism in Indian women's traditional gender roles.

(D) Indian nationalist discourses provided an ideological principle of selection.

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23. The passage given below is followed by four alternate summaries. Choose the option that best captures the essence of the passage. Biologists who publish their research directly to the Web have been labelled as "rogue", but physicists have been routinely publishing research digitally ("preprints"), prior to submitting in a peer-reviewed journal. Advocates of preprints argue that quick and open dissemination of research speeds up scientific progress and allows for wider access to knowledge. But some journals still don't accept research previously published as a preprint. Even if the idea of preprints is gaining ground, one of the biggest barriers for biologists is how they would be viewed by members of their conservative research community.

(A) One of the advantages of digital preprints of research is they hasten the dissemination process, but these are not accepted by most scientific communities.

(B) Compared to biologists, physicists are less conservative in their acceptance of digital pre-publication of research papers, which allows for faster dissemination of knowledge.

(C) While digital publication of research is gaining popularity in many scientific disciplines, almost all peer-reviewed journals are reluctant to accept papers that have been published before.

(D) Preprints of research are frowned on by some scientific fields as they do not undergo a rigourous reviewing process but are accepted among biologists as a quick way to disseminate information.

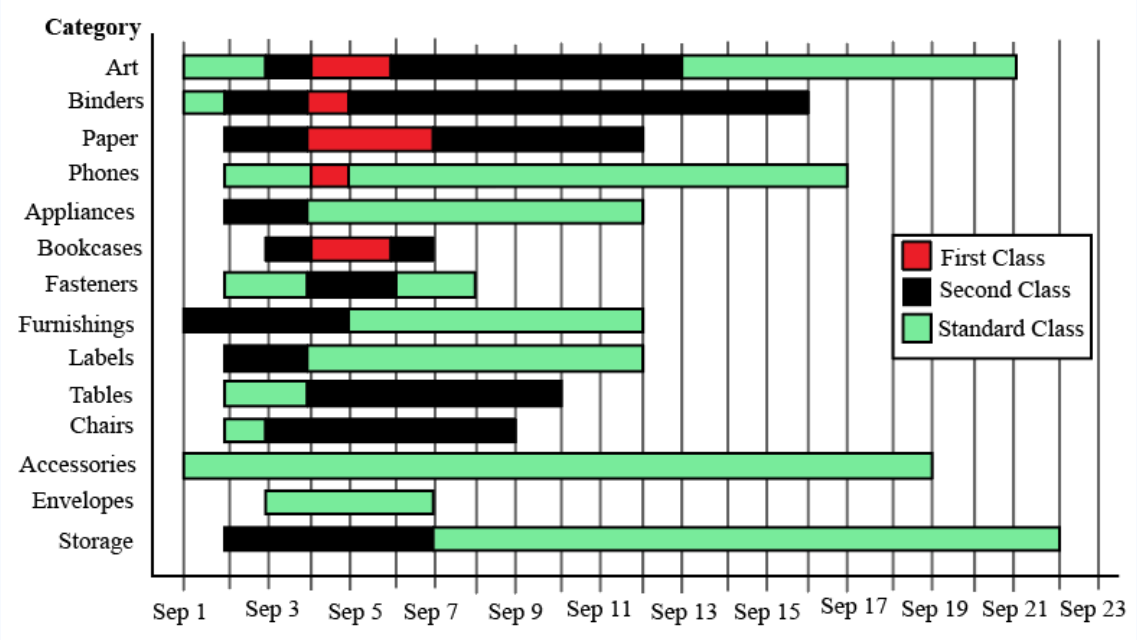
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24. Five jumbled up sentences, related to a topic, are given below. Four of them can be put together to form a coherent paragraph. Identify the odd one out and key in the number of the sentence as your answer:

1. It has taken on a warm, fuzzy glow in the advertising world, where its potential is being widely discussed, and it is being claimed as the undeniable wave of the future.
2. There is little enthusiasm for this in the scientific arena; for them marketing is not a science, and only a handful of studies have been published in scientific journals.
3. The new, growing field of neuromarketing attempts to reveal the inner workings of consumer behaviour and is an extension of the study of how choices and decisions are made.
4. Some see neuromarketing as an attempt to make the "art" of advertising into a science, being used by marketing experts to back up their proposals with some form of real data.
5. The marketing gurus have already started drawing on psychology in developing tests and theories, and advertising people have borrowed the idea of the focus group from social scientists.

Type in the answer.

Questions 25 to 28



The different bars in the diagram above provide information about different orders in various categories (Art, Binders, ….) that were booked in the first two weeks of September of a store for one client. The colour and pattern of a bar denotes the ship mode (First Class / Second Class / Standard Class). The left end point of a bar indicates the booking day of the order, while the right end point indicates the dispatch day of the order. The difference between the dispatch day and the booking day (measured in terms of the number of days) is called the processing time of the order. For the same category, an order is considered for booking only after the previous order of the same category is dispatched. No two consecutive orders of the same category had identical ship mode during this period.

For example, there were only two orders in the furnishing category during this period. The first one was shipped in the Second Class. It was booked on Sep 1 and dispatched on Sep 5. The second order was shipped in the Standard class. It was booked on Sep 5 (although the order might have been placed before that) and dispatched on Sep 12. So the processing times were 4 and 7 days respectively for these orders.

25. How many days between Sep 1 and Sep 14 (both inclusive) had no booking from this client considering all the above categories?

Type in the answer.

26. What was the average processing time of all orders in the categories which had only one type of ship mode?

Type in the answer.

27. The sequence of categories -- Art, Binders, Paper and Phones -- in decreasing order of average processing time of their orders in this period is:

(A) Art, Binders, Paper, Phones
(B) Phones, Art, Binders, Paper
(C) Phones, Binders, Art, Paper
(D) Paper, Binders, Art, Phones

28. Approximately what percentage of orders had a processing time of one day during the period Sep 1 to Sep 22 (both dates inclusive)?

(A) 22%
(B) 16%
(C) 20%
(D) 25%

Questions 29 to 34

Ten objects o1, o2, …, o10 were distributed among Amar, Barat, Charles, Disha, and Elise. Each item went to exactly one person. Each person got exactly two of the items, and this pair of objects is called her/his bundle.

The following table shows how each person values each object.

	o1	o2	o3	o4	o5	o6	o7	o8	o9	o10
Amar	4	9	9	3	7	3	8	7	9	5
Barat	5	9	7	5	5	3	6	8	10	8
Charles	8	8	8	3	6	4	5	8	9	6
Disha	8	8	8	5	5	3	6	4	9	8
Elise	6	8	9	5	6	5	6	3	7	10

The value of any bundle by a person is the sum of that person's values of the objects in that bundle. A person X envies another person Y if X values Y's bundle more than X's own bundle.

For example, hypothetically suppose Amar's bundle consists of o1 and o2, and Barat's bundle consists of o3 and o4. Then Amar values his own bundle at 4 + 9 = 13 and Barat's bundle at 9 + 3 = 12. Hence Amar does not envy Barat. On the other hand, Barat values his own bundle at 7 + 5 = 12 and Amar's bundle at 5 + 9 = 14. Hence Barat envies Amar.

The following facts are known about the actual distribution of the objects among the five people.
1. If someone's value for an object is 10, then she/he received that object.
2. Objects o1, o2, and o3 were given to three different people.
3. Objects o1 and o8 were given to different people.
4. Three people value their own bundles at 16. No one values her/his own bundle at a number higher than 16.
5. Disha values her own bundle at an odd number. All others value their own bundles at an even number.
6. Some people who value their own bundles less than 16 envy some other people who value their own bundle at 16. No one else envies others.

29. What BEST can be said about object o8?

(A) o8 was given to Amar, Charles, or Disha
(B) o8 was given to Disha
(C) o8 was given to Charles
(D) o8 was given to Charles or Disha

30. Who among the following envies someone else?

(A) Barat
(B) Charles
(C) Amar
(D) Elise

31. What is Amar's value for his own bundle?

Type in the answer.

32. Object o4 was given to

(A) Elise
(B) Barat
(C) Charles
(D) Disha

33. Object o5 was given to

(A) Disha
(B) Elise
(C) Amar
(D) Charles

34. What BEST can be said about the distribution of object o1?

(A) o1 was given to Disha
(B) o1 was given to Charles
(C) o1 was given to Charles, Disha, or Elise
(D) o1 was given to Charles or Disha

Questions 35 to 38

The game of Chango is a game where two people play against each other; one of them wins and the other loses, i.e., there are no drawn Chango games. 12 players participated in a Chango championship. They were divided into four groups: Group A consisted of Aruna, Azul, and Arif; Group B consisted of Brinda, Brij, and Biju; Group C consisted of Chitra, Chetan, and Chhavi; and Group D consisted of Dipen, Donna, and Deb.

Players within each group had a distinct rank going into the championship. The players have NOT been listed necessarily according to their ranks. In the group stage of the game, the second and third ranked players play against each other, and the winner of that game plays against the first ranked player of the group. The winner of this second game is considered as the winner of the group and enters a semi-final.

The winners from Groups A and B play against each other in one semi-final, while the winners from Groups C and D play against each other in the other semi-final. The winners of the two semi-finals play against each other in the final to decide the winner of the championship.

It is known that:
1. Chitra did not win the championship.
2. Aruna did not play against Arif. Brij did not play against Brinda.
3. Aruna, Biju, Chitra, and Dipen played three games each, Azul and Chetan played two games each, and the remaining players played one game each.

35. Who among the following was DEFINITELY NOT ranked first in his/her group?

(A) Dipen
(B) Aruna
(C) Brij
(D) Chitra

36. Which of the following pairs must have played against each other in the championship?

(A) Deb, Donna
(B) Azul, Biju
(C) Donna, Chetan
(D) Chitra, Dipen

37. Who won the championship?

(A) Chitra
(B) Aruna
(C) Brij
(D) Cannot be determined

38. Who among the following did NOT play against Chitra in the championship?

(A) Aruna
(B) Chetan
(C) Dipen
(D) Biju

Questions 39 to 44

Ravi works in an online food-delivery company. After each delivery, customers rate Ravi on each of four parameters - Behaviour, Packaging, Hygiene, and Timeliness, on a scale from 1 to 9. If the total of the four rating points is 25 or more, then Ravi gets a bonus of ₹20 for that delivery. Additionally, a customer may or may not give Ravi a tip. If the customer gives a tip, it is either ₹30 or ₹50.

One day, Ravi made four deliveries - one to each of Atal, Bihari, Chirag, and Deepak, and received a total of ₹120 in bonus and tips. He did not get both a bonus and a tip from the same customer.

The following additional facts are also known.
1. In Timeliness, Ravi received a total of 21 points, and three of the customers gave him the same rating points in this parameter. Atal gave higher rating points than Bihari and Chirag in this parameter.
2. Ravi received distinct rating points in Packaging from the four customers adding up to 29 points. Similarly, Ravi received distinct rating points in Hygiene from the four customers adding up to 26 points.
3. Chirag gave the same rating points for Packaging and Hygiene.
4. Among the four customers, Bihari gave the highest rating points in Packaging, and Chirag gave the highest rating points in Hygiene.
5. Everyone rated Ravi between 5 and 7 in Behaviour. Unique maximum and minimum ratings in this parameter were given by Atal and Deepak respectively.
6. If the customers are ranked based on ratings given by them in individual parameters, then Atal's rank based on Packaging is the same as that based on Hygiene. This is also true for Deepak.

39. What was the minimum rating that Ravi received from any customer in any parameter?

Type in the answer.

40. The COMPLETE list of customers who gave the maximum total rating points to Ravi is

(A) Atal
(B) Bihari
(C) Bihari and Chirag
(D) Atal and Bihari

41. What rating did Atal give on Timeliness?

Type in the answer.

42. What BEST can be concluded about the tip amount given by Deepak?

(A) Either ₹0 or ₹30 or ₹50
(B) Either ₹30 or ₹50
(C) ₹50
(D) ₹30

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43. In which parameter did Atal give the maximum rating points to Ravi?

(A) Hygiene
(B) Behaviour
(C) Timeliness
(D) Packaging

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44. What rating did Deepak give on Packaging?

(A) 7
(B) 8
(C) 5
(D) 6

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45. For all possible integers n satisfying $2.25 \leq 2 + 2^{n+2} \leq 202$, then the number of integer values of $3 + 3^{n+1}$ is:

Type in the answer.

---

46. Three positive integers x, y and z are in arithmetic progression. If $y - x > 2$ and $xyz = 5(x + y + z)$, then z-x equals

(A) 8
(B) 12
(C) 14
(D) 10

---

47. For a 4-digit number, the sum of its digits in the thousands, hundreds and tens places is 14, the sum of its digits in the hundreds, tens and units places is 15, and the tens place digit is 4 more than the units place digit. Then the highest possible 4-digit number satisfying the above conditions is

Type in the answer.

---

48. Raj invested ₹ 10000 in a fund. At the end of first year, he incurred a loss but his balance was more than ₹ 5000. This balance, when invested for another year, grew and the percentage of growth in the second year was five times the percentage of loss in the first year. If the gain of Raj from the initial investment over the two year period is 35%, then the percentage of loss in the first year is

(A) 5
(B) 15
(C) 17
(D) 10

---

49. The number of ways of distributing 15 identical balloons, 6 identical pencils and 3 identical erasers among 3 children, such that each child gets at least four balloons and one pencil, is

Type in the answer.

---

50. Two trains A and B were moving in opposite directions, their speeds being in the ratio 5 : 3. The front end of A crossed the rear end of B 46 seconds after the front ends of the trains had crossed each other. It took another 69 seconds for the rear ends of the trains to cross each other. The ratio of length of train A to that of train B is

(A) 3:2
(B) 5:3
(C) 2:3
(D) 2:1

---

51. Suppose one of the roots of the equation $ax^2 - bx + c = 0$ is $2 + \sqrt{3}$, Where a,b and c are rational numbers and $a \neq 0$. If $b = c^3$ then $|\ a\ |$ equals.

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

---

52. From a container filled with milk, 9 litres of milk are drawn and replaced with water. Next, from the same container, 9 litres are drawn and again replaced with water. If the volumes of milk and water in the container are now in the ratio of 16 : 9, then the capacity of the container, in litres, is

Type in the answer.

---

53. If a rhombus has area 12 sq cm and side length 5 cm, then the length, in cm, of its longer diagonal is

(A) $\sqrt{37}+\sqrt{13}$

(B) $\sqrt{13}+\sqrt{12}$

(C) $\frac{\sqrt{37}+\sqrt{13}}{2}$

(D) $\frac{\sqrt{13}+\sqrt{12}}{2}$

---

54. If $\log_2[3+\log_3\{4+\log_4(x-1)\}]-2=0$ then 4x equals

Type in the answer.

---

55. The sides AB and CD of a trapezium ABCD are parallel, with AB being the smaller side. P is the mid-point of CD and ABPD is a parallelogram. If the difference between the areas of the parallelogram ABPD and the triangle BPC is 10 sq cm, then the area, in sq cm, of the trapezium ABCD is

(A) 30

(B) 40

(C) 25

(D) 20

---

56. For all real values of x, the range of the function $f(x)=\frac{x^2+2x+4}{2x^2+4x+9}$ is:

(A) $[\frac{4}{9},\frac{8}{9}]$

(B) $[\frac{3}{7},\frac{8}{9})$

(C) $(\frac{3}{7},\frac{1}{2})$

(D) $[\frac{3}{7},\frac{1}{2})$

---

57. For a sequence of real numbers $x_1, x_2, ...x_n$, If $x_1-x_2+x_3-....+(-1)^{n+1}x_n=n^2+2n$ for all natural numbers n, then the sum $x_{49}+x_{50}$ equals

(A) 200

(B) 2

(C) -200

(D) -2

---

58. For a real number x the condition $\mid 3x-20\mid+\mid 3x-40\mid=20$ necessarily holds if

(A) $10<x<15$

(B) $9<x<14$

(C) $7<x<12$

(D) $6<x<11$

---

59. Anil can paint a house in 60 days while Bimal can paint it in 84 days. Anil starts painting and after 10 days, Bimal and Charu join him. Together, they complete the painting in 14 more days. If they are paid a total of ₹ 21000 for the job, then the share of Charu, in INR, proportionate to the work done by him, is

(A) 9000

(B) 9200

(C) 9100

(D) 9150

---

60. A box has 450 balls, each either white or black, there being as many metallic white balls as metallic black balls. If 40% of the white balls and 50% of the black balls are metallic, then the number of non-metallic balls in the box is

Type in the answer.

---

61. In a football tournament, a player has played a certain number of matches and 10 more matches are to be played. If he scores a total of one goal over the next 10 matches, his overall average will be 0.15 goals per match. On the other hand, if he scores a total of two goals over the next 10 matches, his overall average will be 0.2 goals per

match. The number of matches he has played is

Type in the answer.

---

62. A person buys tea of three different qualities at ₹ 800, ₹ 500, and ₹ 300 per kg, respectively, and the amounts bought are in the proportion 2 : 3 : 5. She mixes all the tea and sells one-sixth of the mixture at ₹ 700 per kg. The price, in INR per kg, at which she should sell the remaining tea, to make an overall profit of 50%, is

(A) 653
(B) 688
(C) 692
(D) 675

---

63. Consider the pair of equations: $x^2 - xy - x = 22$ and $y^2 - xy + y = 34$. If $x > y$, then $x - y$ equals

(A) 6
(B) 4
(C) 7
(D) 8

---

64. Let D and E be points on sides AB and AC, respectively, of a triangle ABC, such that AD : BD = 2 : 1 and AE : CE = 2 : 3. If the area of the triangle ADE is 8 sq cm, then the area of the triangle ABC, in sq cm, is

Type in the answer.

---

65. Anil, Bobby, and Chintu jointly invest in a business and agree to share the overall profit in proportion to their investments. Anil's share of investment is 70%. His share of profit decreases by ₹ 420 if the overall profit goes down from 18% to 15%. Chintu's share of profit increases by ₹ 80 if the overall profit goes up from 15% to 17%. The amount, in INR, invested by Bobby is

(A) 2000
(B) 2400
(C) 2200
(D) 1800

---

66. Two pipes A and B are attached to an empty water tank. Pipe A fills the tank while pipe B drains it. If pipe A is opened at 2 pm and pipe B is opened at 3 pm, then the tank becomes full at 10 pm. Instead, if pipe A is opened at 2 pm and pipe B is opened at 4 pm, then the tank becomes full at 6 pm. If pipe B is not opened at all, then the time, in minutes, taken to fill the tank is

(A) 144
(B) 140
(C) 264
(D) 120

- End of Question Paper -
