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CAT 2019 Question Paper Slot 1

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## Verbal Ability and Reading Comprehension

As defined by the geographer Yi-Fu Tuan, topophilia is the affective bond between people and place. His 1974 book set forth a wide-ranging exploration of how the emotive ties with the material environment vary greatly from person to person and in intensity, subtlety, and mode of expression. Factors influencing one's depth of response to the environment include cultural background, gender, race, and historical circumstance, and Tuan also argued that there is a biological and sensory element. Topophilia might not be the strongest of human emotionsindeed, many people feelutterly indifferenttowardtheenvironments thatshapetheirlivesbut when activated it has the power to elevate a place to become the carrier of emotionally charged events or to be perceived as a symbol.

Aesthetic appreciation is one way in which people respond to the environment. Abrilliantly colored rainbow after gloomy afternoon showers, a busy city street alive with human interaction-one mightexperience the beauty of suchlandscapes thathad seemed quite ordinary only moments before orthat arebeing newly discovered. This isquite the opposite of asecondtopophilicbond, namelythatofthe acquiredtasteforcertainlandscapes and places that one knows well. When a place is home, or when a space has become the locus of memories or the means of gaining a livelihood, it frequently evokes a deeper set of attachments thanthose predicated purely on the visual. Athirdresponse totheenvironment also depends on the human senses but may be tactile and olfactory, namely a delight in the feel and smell of air, water, and the earth.

Topophilia-and its very close conceptual twin, sense of place-is an experience that, however elusive, has inspiredrecentarchitects and planners. Mostnotably, newurbanism seeks to counter the perceived placelessness of modern suburbs and the decline of central cities through neo-traditional design motifs. Although motivated by good intentions, such attempts to create places rich in meaning are perhaps bound to disappoint. As Tuan noted, purely aesthetic responses often are suddenly revealed, buttheir intensity rarely is longlasting. Topophilia is difficult to design for and impossible to quantify, and its most articulate interpreters have been self-reflective philosophers such as Henry David Thoreau, evoking a marvelously intricate sense of place at Walden Pond, and Tuan, describing his deep affinity for the desert.

Topophilia connotes a positive relationship, but it often is useful to explore the darker affiliations between people and place. Patriotism, literally meaning the love of one's terra

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patria or homeland, has long been cultivated by governing elites for a range of nationalist projects, including war preparation and ethnic cleansing. Residents of upscale residential developments havedisclosed howimportantitisto maintaintheir community's distinct identity, often by casting themselves in a superior social position and by reinforcing class and racial differences. And just as a beloved landscape is suddenly revealed, so too may landscapes offear cast a darkshadow over a place that makes one feel a sense of dread or anxiety-or topophobia.
Q. 1: The word "topophobia" in the passage is used:

1. to represent a feeling of dread towards particular spaces and places.
2. to signify the fear of studying the complex discipline of topography.
3. as a metaphor expressing the failure of the homeland to accommodate non-citizens.
4. to signify feelings of fear or anxiety towards topophilic people.
Q.2: Which of the following statements, iftrue, could be seen as not contradicting the arguments in thepassage?
5. The most important, even fundamental, response to our environment is our tactile and olfactory response.
6. Generally speaking, in a given culture, the ties of the people to their environment vary little in significance or intensity.
7. Patriotism, usually seen as a positive feeling, is presented by the author as a darker form of topophilia.
8. New Urbanism succeeded in those designs where architects collaborated with their clients.
Q. 3: In the last paragraph, the author uses the example of "Residents of upscale residential developments" to illustrate the:
9. introduction ofnationalistprojects bysuchelitestoproduceasenseofdreador topophobia.
10. social exclusivism practised by such residents in order to enforce a sense of racial or class superiority.
11. manner in which environments are designed to minimise the social exclusion of their clientele.
12. sensitive response to race and class problems in upscale residential developments.

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Q.4:Which one of the following best captures the meaning of the statement, "Topophilia is difficult to design for and impossible to quantify . . ."?

1. People's responses to their environment are usually subjective and so cannot be rendered in design.
2. The deep anomie of modern urbanisation led to new urbanism's intricate sense of place.
3. Architects have to objectively quantify spaces and hence cannot be topophilic.
4. Philosopher-architects are uniquely suited to develop topophilic design.
Q.5: Whichone ofthefollowing comes closestinmeaning totheauthor'sunderstanding of topophilia?
5. Thetendency of many culturesto represent theirlandas"motherland" or"fatherland" may be seen as an expression of their topophilia
6. Nomadicsocieties areknownto havetheleastaffinity for thelandsthrough whichthey traverse because they tend to be topophobic.
7. The French are not overly patriotic, but they will refuse to use English as far as possible, even when they know it well.
8. Scientists have found that most creatures, including humans, are either born with or cultivate a strong sense of topography.
"Free of the taint of manufacture" - that phrase, in particular, is heavily loaded with the ideology of what the Victorian socialist William Morris called the "anti-scrape", or an anticapitalist conservationism (not conservatism) that solaced itself with the vision of a preindustrial golden age. In Britain, folk may often appear a cosy, fossilised form, but when you look more closely, the idea of folk - who has the right to sing it, dance it, invoke it, collect it, belong to itor appropriate itfor political orcultural ends-has always been contested territory.

In our own time, though, the word "folk" . . . has achieved the rare distinction of occupying fashionable and unfashionable status simultaneously. Just as the effusive floral prints of the radicalWilliam Morris now cover genteel sofas, sothe revolutionary intentions of many folk historians and revivalists haveled to music that is commonly regarded as parochial and conservative. And yet - as newspaper columns periodically rejoice - folk is hip again, influencing artists, clothing and furniture designers, celebrated at musicfestivals, awards ceremonies and on TV, reissued on countless recordlabels. Folkis a sonic "shabby chic", containing elements of the uncanny and eerie, as well as an antique veneer, a whiff of Britain's

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heathen dark ages. The very obscurity and anonymity of folk music's origins open up space for rampant imaginative fancies. . . .
[Cecil Sharp, who wrote about this subject, believed that] folk songs existed in constant transformation, aliving example of anartforminaperpetual state ofrenewal. "Onemansings a song, and then others sing it after him, changing what they do not like" is the most concise summary of his conclusionsonitsorigins. Hecompared eachrendition of aballad to anacorn falling from an oak tree; every subsequent iteration sows the song anew. But there is tension in newness. In the late 1960s, purists were suspicious of folk songs recast in rock idioms. Electrification, however, comes in many forms. For the early-20th-century composers such as Vaughan Williams and Holst, there were thunderbolts of inspiration from oriental mysticism, angular modernism and the body blow of the first world war, as well as input from the rediscovered folk tradition itself.

For the second wave of folk revivalists, such as Ewan MacColl and AL Lloyd, starting in the 40s, the vital sparkwas communism's dreamof a post-revolutionary New Jerusalem. For their youngersuccessorsinthe60s, whothronged thefolkclubs set upby theoldguard, thelyrical freedom of Dylan and the unchained melodies of psychedelia created the conditions for folkrock'sowngoldenage, abrief Indian summerthatlastedfromabout 1969to 1971......Four decades on, even that progressive period has become just one more era ripe for fashionable emulation and pastiche. The idea of a folk tradition being exclusively confined to oral transmission has become a much looser, less severely guarded concept. Recorded music and television, for today's metropolitan generation, are where the equivalent of folk memories are seeded.

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Q.6: All of the following are causes for plurality and diversity withinthe British folk tradition EXCEPT:

1. paradoxically, folk forms are both popular and unpopular.
2. that British folk continues to have traces of pagan influence from the dark ages.
3. that British folk forms can be traced to the remote past of the country.
4. the fluidity of folk forms owing to their history of oral mode of transmission.
Q.7:Which ofthefollowing statements aboutfolkrevivalismofthe 1940s and 1960scannot be inferred from the passage?
5. Even though it led to folk-rock's golden age, it wasn't entirely free from critique.

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2. Electrification of music would not have happened without the influence of rock music.
3. Freedomand rebellion were popular themes during the second wave of folk revivalism.
4. It reinforced Cecil Sharp's observation about folk's constant transformation.
Q. 8: The author says that folk "may often appear a cosy, fossilised form" because:
5. it has been arrogated for various political and cultural purposes.
6. folk is a sonic "shabby chic" with an antique veneer.
7. the notion of folk has led to several debates and disagreements.
8. of its nostalgic association with a pre-industrial past.
Q. 9: The primary purpose of the reference to William Morris and his floral prints is to show:
9. the pervasive influence of folk on contemporary art, culture, and fashion.
10. that what was once derided as genteel is now considered revolutionary.
11. that what is once regarded as radical in folk, can later be seen as conformist.
12. that despite its archaic origins, folk continues to remain a popular tradition.
Q.10: At a conference on folkforms, the author of the passage is leastlikely to agree with which one of the following views?
13. Thepower offolkresidesinitscontradictory abilityto influence andbeinfluenced by the present while remaining rooted in the past.
14. Folk forms, despite their archaic origins, remain intellectually relevant in contemporary times.
15. Folkforms, intheir ability to constantlyadapttothechangingworld, exhibitanunusual poise and homogeneity with each change.
16. The plurality and democratising impulse of folk forms emanate from the improvisation that its practitioners bring to it.

Contemporary internetshopping conjures a perfectstormofchoice anxiety. Research has consistently held that people who are presented with a few options make better, easier decisions than those presented with many ...... Helping consumers figure out what to buy amid anendless sea of choice online hasbecome acottageindustry unto itself. Many brands and retailersnowwieldmarketingbuzzwords such as curation, differentiation, anddiscovery as they attempt to sell an assortment of stuff targeted to their ideal customer. Companies find such shoppersthrough the data gold mine ofdigital advertising, whichcancatalog people by gender, income level, personal interests, and more. Since Americans have lost the ability to sort throughthe sheervolume ofthe consumer choices availableto them, aghost nowhas to bein

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theretailmachine, whetherit'sanalgorithm, aninfluencer,orsomesnazzyadtechtohelpa product follow you around the internet. Indeed, choice fatigue is one reason so many people gravitate toward lifestyle influencers on Instagram-the relentlessly chic young moms and perpetually vacationing 20-somethings-who present an aspirational worldview, and then recommend the products and services that help achieve it. . . .

Forarelativelynewclass ofconsumer-productsstart-ups, there'sanothermethodentirely. Instead of making sense of a sea of existing stuff, thesecompanies claimto disruptstuff as Americans know it. Casper (mattresses), Glossier (makeup), Away (suitcases), and many others have sprouted up to offer consumers freedom from choice: The companies have a few aesthetically pleasing and supposedly highly functional options, usually at mid-range prices. They're selling nice things, but maybe more importantly, they're selling a confidence in those things, and an ability to opt out of the stuff rat race. . . .

One-thousand-dollar mattresses and $\$ 300$ suitcases might solve choice anxiety for a certaintier of consumer, butthe companies that sell them, along with those that attempt to massage the larger stuff economy into something navigable, are still just working within a consumer market that's broken in systemic ways. The presence of so much stuff in America might be more valuable if it were more evenly distributed, but stuff's creators tend to focus their energy on those who already have plenty. As options have expanded for people with disposable income, theopportunity tobuy evenbasicthingssuchas freshfood orquality diapers has contracted for much of America's lower classes.

For start-ups that promise accessible simplicity, their very structure still might eventually push them toward overwhelming variety. Most of these companies are based on hundreds of millions of dollars of venture capital, the investors of which tend to expect a steep growth rate that can't be achieved by selling one great mattress or one great sneaker. Casper has expanded intobedroomfurniture and bedlinens. Glossier, afteryearsofmarketing itselfas no-makeup makeup that requires little skill to apply, recently launched a full line of glittering color cosmetics. There may be no way to opt out of stuff by buying into the right thing.
Q.11: Which one ofthe following bestsumsuptheoverall purpose ofthe examples of Casper and Glossier in the passage?

1. They are facilitating a uniform distribution of commodities in the market.
2. They might transform into what they were exceptions to.
3. They are exceptions to a dominant trend in consumer markets.

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4. They are increasing the purchasing power of poor Americans.
Q.12: A new food brand planstolaunch aseries of products inthe American market. Which of the following product plans is most likely to be supported by the author of the passage?
5. A range of 25 products priced between $\$ 10$ and $\$ 25$.
6. A range of 10 products priced between $\$ 5$ and $\$ 10$.
7. A range of 10 products priced between $\$ 10$ and $\$ 25$.
8. A range of 25 products priced between $\$ 5$ and $\$ 10$.
Q. 13: Based on the passage, all of the following can be inferred about consumer behavior EXCEPT that:
9. too many options have made it difficult for consumers to trust products.
10. consumers tend to prefer products by start-ups over those by established companies.
11. having too many product options can be overwhelming for consumers.
12. consumers are susceptible to marketing images that they see on social media.
Q. 14: All of the following, IF TRUE, would weaken the author's claims EXCEPT:
13. product options increased market competition, bringing down the prices of commodities, which, inturn, increased purchasing power of the poor.
14. theannual salesgrowth ofcompanieswithfewerproductoptionswerehigherthanthat of companies which curated their products for target consumers.
15. the empowerment felt by purchasers in buying a commodity were directly proportional to the number of options they could choose from.
16. the annual sale of companies that hired lifestyle influencers on Instagram for marketing their products were 40\% less than those that did not.
Q.15: Which of the following hypothetical statements would add the least depth to the author's prediction of the fate of start-ups offering few product options?
17. With Casper and Glossier venturing into new product ranges, their regular customers start losing trust in the companies and their products.
18. Start-ups with few product options are no exception to the American consumer market that is deeply divided along class lines.
19. An exponential surge in their sales enables start-ups to meet their desired profit goals without expanding their product catalogue.

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4. With the motive of promoting certain rival companies, the government decides to double the tax-rates for these start-ups.

In the past, credit for telling the tale of Aladdin has often gone to Antoine Galland . . . the first European translator of . . . Arabian Nights [which] started as a series of translations of an incompletemanuscriptofamedieval Arabicstory collection...But, thoughthosetaleswereof medieval origin, Aladdin may be a more recent invention. Scholars have not found a manuscript of the story that predates the version published in 1712 by Galland, who wrote in his diary that he first heard the tale from a Syrian storyteller from Aleppo named Hanna Diyab . . .

Despite the fantastical elements of the story, scholars now think the main character may actually be based on a real person's real experiences ...... Though Galland nevercredited Diyab in his published translations of the Arabian Nights stories, Diyab wrote something of his own: a travelogue pennedinthemid-18th century. Init, herecalls telling Gallandthe story of Aladdin [and] describes his own hard-knocks upbringing and the way he marveled at the extravagance of Versailles. The descriptions he uses were very similar to the descriptions of the lavish palace that ended up in Galland's version of the Aladdin story. [Therefore, author Paulo Lemos] Horta believesthat"Aladdin mightbetheyoung ArabMaronitefromAleppo, marveling atthejewels and riches of Versailles." . . .

For 300 years, scholars thought that the rags-to-riches story of Aladdin might have been inspired by the plots of French fairy tales that came out around the sametime, or that the story was inventedinthat 18th century period as abyproduct ofFrench Orientalism, a fascination with stereotypical exoticMiddleEasternluxuriesthatwas prevalentthen. TheideathatDiyab might havebasedit on his ownlife - theexperiences of a Middle Easternman encountering theFrench, notvice-versa-flipsthe script.[According toHorta,]"Diyabwasideally placed to embody the overlapping world of East and West, blending the storytelling traditions of his homeland with his youthful observations of the wonder of 18th-century France." . . .

To the scholars who study the tale, its narrative drama isn'tthe only reason storytellerskeep finding reason to return to Aladdin. It reflects not only "a history of the French and the Middle East, butalso[astory about]MiddleEasterners coming to Paris andthat speaksto ourworld today," as Horta puts it. "The day Diyab told the story of Aladdin to Galland, there were riots duetofoodshortagesduringthe winterand spring of 1708to 1709, and Diyabwassensitive to those people in a way that Galland is not. When you read this diary, you see this solidarity among the Arabs who were in Paris at the time. .... There is little in the writings of Galland that would suggest that he was capable of developing a character like Aladdin with sympathy, but Diyab'smemoir reveals a narratoradeptatcapturingthedistinctivepsychology ofayoung
protagonist, as well as recognizing the kinds of injustices and opportunities that can transform the path of any youthful adventurer."
Q.16: Whichofthe following does not contribute tothe passage's claimaboutthe authorship of Aladdin?

1. The depiction of the affluence of Versailles in Diyab's travelogue.
2. The narrative sensibility of Diyab's travelogue.
3. The story-line of many French fairy tales of the 18th century.
4. Galland's acknowledgment of Diyab in his diary.
Q.17: The author of the passage is most likely to agree with which of the following explanations for the origins of the story of Aladdin?
5. Basing it on his own life experiences, Diyab transmitted the story of Aladdin to Galland who included it in Arabian Nights.
6. Galland received the story of AladdinfromDiyabwho, inturn, found itin an incomplete medieval manuscript.
7. The story of Aladdin has its origins in an undiscovered, incomplete manuscript of a medieval Arabic collection of stories.
8. Galland derived the story of Aladdin from Diyab's travelogue in which he recounts his fascination with the wealth of Versailles.
Q.18: Which of the following is the primary reasonfor why storytellers are still fascinated by the story of Aladdin?
9. The story of Aladdin is evidence of the eighteenth century French Orientalist attitude.
10. The traveller's experience that inspired the tale of Aladdin resonates even today.
11. The tale of Aladdin documents the history of Europe and Middle East.
12. The archetype of the rags-to-riches story of Aladdin makes it popular even today.
Q. 19: All ofthefollowing serve as evidenceforthecharacterofAladdinbeing basedon Hanna Diyab EXCEPT:
13. Diyab's cosmopolitanism and cross-cultural experience.
14. Diyab's humble origins and class struggles, as recounted in his travelogue.
15. Diyab's narration of the original story to Galland.
16. Diyab's description of the wealth of Versailles in his travelogue.

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Q. 20: Which of the following, if true, would invalidate the inversion that the phrase"flips the script" refers to?

1. Galland acknowledged in the published translations of Arabian Nights that he heard the story of Aladdin from Diyab.
2. Diyab's travelogue described the affluence of the French city of Bordeaux, instead of Versailles.
3. The French fairy tales of the eighteenth century did not have rags-to-riches plot lines like that of the tale of Aladdin.
4. The description of opulence in Hanna Diyab's and Antoine Galland's narratives bore no resemblance to eachother.

Scientists recently discovered that Emperor Penguins—one of Antarctica's most celebrated species—employ a particularly unusual technique for surviving the daily chill. As detailed in an article published today in the journal Biology Letters, the birds minimize heat loss by keeping the outersurface of theirplumage belowthe temperature ofthe surrounding air. Atthe same time, the penguins' thick plumage insulates their body and keeps it toasty. ...

The researchers analyzed thermographic images .....taken over roughly a month during June 2008. During that period, the average airtemperature was 0.32 degrees Fahrenheit. At the same time, the majority of the plumage covering the penguins' bodies was evencolder: the surface of their warmest body part, their feet, was an average 1.76 degrees Fahrenheit, but the plumageontheirheads, chests andbackswere-1.84,-7.24and-9.76degreesFahrenheit respectively. Overall, nearly the entire outer surface of the penguins' bodies was below freezing atalltimes, exceptfortheireyesand beaks. Thescientistsalsousedacomputer simulationto determinehow much heatwas lostorgained fromeach part of the body_anddiscoveredthat by keeping their outer surface below airtemperature, the birds might paradoxically be able to draw very slight amounts of heat from the air around them. The key to their trick is the difference between two different types of heat transfer: radiation and convection.

Thepenguins dolose internal body heattothe surrounding airthroughthermal radiation, just as ourbodiesdoona coldday. Because theirbodies (butnotsurface plumage) are warmer than the surrounding air, heat gradually radiates outward overtime, moving from a warmer material to acolder one. To maintain body temperature while losing heat, penguins, like all warm-blooded animals, rely on the metabolism of food. The penguins, though, have an additional strategy. Since their outer plumage is even colder than the air, the simulation showedthat they mightgainbackalittle ofthisheatthroughthermal convection-thetransfer of heat viathe movement of a fluid (inthis case, the air). As the cold Antarctic air cycles around

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their bodies, slightly warmer air comes into contact with the plumage and donates minute amounts of heatbacktothe penguins, thencycles away ataslightly coldertemperature.

Most of this heat, the researchers note, probably doesn't make it all the way through the plumage and back tothe penguins'bodies, butitcouldmakeaslightdifference. Atthevery least, the method by which a penguin's plumage wicks heat from the bitterly cold air that surrounds ithelps to canceloutsome of the heatthat's radiating fromits interior. And given the Emperors' unusually demanding breeding cycle, every bit of warmth counts.......Since [penguinstrekasfaras 75 miles tothe coasttobreedandmalepenguins]don'teatanything during [the incubation period of 64 days], conserving calories by giving up as little heat as possible is absolutely crucial.
Q.21: Inthe lastsentence of paragraph3, "slightly warmer air" and"at aslightly colder temperature" refer to_AND $\qquad$ respectively:

1. the air inside penguins' bodies kept warm because of metabolism of food AND the fall in temperature of the body air after it transfers some heat to the plumage.
2. the cold Antarctic air whosetemperature is higher than thatof the plumage AND the fall in temperature of the Antarctic air after it has transmitted some heat to the plumage.
3. the airtrapped inthe plumage which is warmerthanthe Antarctic air AND the fall in temperature of the trapped plumage air after it radiates out some heat.
4. the cold Antarctic air which becomes warmer because of the heat radiated out from penguins' bodies AND the fall intemperature of the surrounding air after thermal convection.
Q.22:Whichofthefollowing bestexplainsthepurpose oftheword"paradoxically" as used by the author?
5. Keeping a part of their body colder helps penguins keep their bodies warmer.
6. Heat loss through radiation happens despite the heat gain through convection.
7. Keeping their body colder helps penguins keep their plumage warmer.
8. Heat gain through radiation happens despite the heat loss through convection.
Q. 23: Which of the following can be responsible for Emperor Penguins losing body heat?
9. Reproduction process.
10. Thermal convection.
11. Food metabolism.

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4. Plumage.
Q. 24: All of the following, if true, would negate the findings of the study reported in the passage EXCEPT:
5. theaverageairtemperature recordedduring themonth of June2008 inthe areaof study were - 10 degrees Fahrenheit.
6. the averagetemperature ofthe feet of penguins inthe month of June2008werefound to be 2.76 degrees Fahrenheit.
7. the temperature of the plumage on the penguins' heads, chests and backs were found to be $1.84,7.24$ and 9.76 degrees Fahrenheit respectively.
8. the penguins' plumage were made of a materialthat did notallow any heattransfer through convection or radiation.
Q.25:The foursentences(labelled 1,2,3,4) givenbelow, when properly sequencedwould yield a coherent paragraph. Decide on the proper sequence of the order of the sentences and key in the sequence of the four numbers as your answer.
9. People with dyslexia have difficulty with print-reading, and people with autism spectrum disorder have difficulty with mind-reading.
10. An example of a lost cognitive instinct is mind-reading: our capacity to think of ourselves and others as having beliefs, desires, thoughts and feelings.
11. Mind-reading looks increasingly like literacy, a skill we know for sure is not in our genes, since scripts have been around for only 5,000-6,000 years.
12. Print-reading, like mind-reading varies across cultures, depends heavily on certain parts of the brain, and is subject to developmental disorders.

Q.26: The foursentences(labelled 1,2,3,4) givenbelow, when properlysequenced would yield a coherent paragraph. Decide on the proper sequence of the order of the sentences and key in the sequence of the four numbers as your answer.
13. Metaphors may map to similar meanings across languages, but their subtle differences can have a profound effect on our understanding of the world.

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2. Latinscholarspointoutcarpediemis a horticultural metaphorthat, particularly seen inthe context of its source, is more accurately translated as "plucking the day," evoking the plucking and gathering of ripening fruits or flowers, enjoying a moment that is rooted in the sensory experience of nature, unrelated to the force implied in seizing.
3. The phrase carpe diem, which is often translated as "seize the day and its accompanying philosophy, has gone on to inspire countless people in how they live their lives and motivates us to see the world a little differently from the norm
4. It's an example of one of the moretelling ways that we mistranslate metaphors from one language to another, revealing in the process our hidden assumptions about what we really value.
Q.27: Five sentences related to a topic are given below. Four of themcan be put together to form a meaningful and coherent short paragraph. Identify the odd one out. Choose its number as your answer and key it in.
5. One argument is that actors that do not fit within asingle, well-defined category may suffer an "illegitimacy discount".
6. Others believe that complex identities confuse audiences about an organization's role or purpose.
7. Some organizations have complex and multidimensional identities that span or combine categories, while other organizations possess narrow identities.
8. Identity is one of the mostimportantfeatures oforganizations, butthereexistopposing views among sociologists about how identity affects organizational performance.
9. Those who think that complex identities are beneficial point to the strategic advantages of ambiguity, and organizations' potential to differentiate themselves from competitors.

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Q.28:The foursentences(labelled 1,2,3,4) givenbelow, when properly sequenced would yield a coherent paragraph. Decide on the proper sequence of the order of the sentences and key in the sequence of the four numbers as your answer.

1. Ifyou've seen alittle line oftext on websites that says something like "customers who bought this also enjoyed that" you have experienced this collaborative filtering firsthand.
2. Theproblemwiththese algorithms isthattheydon'ttakeintoaccount ahostofnuances and circumstances that might interfere with their accuracy.
3. If you just bought a gardening book for your cousin, you might get a flurry of links to books aboutgardening, recommendedjustforyou!-thealgorithmhas noway ofknowing you hate gardening and only bought the book as a gift.
4. Collaborative filtering is a mathematical algorithm by which correlations and cooccurrences of behaviors are tracked and then used to make recommendations.

Q.29: The foursentences (labelled 1,2,3,4) givenbelow, when properly sequenced would yield a coherent paragraph. Decide on the proper sequence of the order of the sentences and key in the sequence of the four numbers as your answer.
5. We'll all live under mob rule until then, which doesn't help anyone.
6. Perhaps we need to learn to condense the feedback we receive online so that 100 replies carry the same weight as just one.
7. As we grow more comfortable with social media conversations being part of the way we interact every day, we are going to have to learn how to deal with legitimate criticism.
8. A newnorm will arise where it is considered unacceptable to reply with the same point that dozens of others have already.

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Q. 30: The passage given below is followed by four alternate summaries. Choose the option that best captures the essence of the passage.

A distinguishing feature of language is our ability to refer to absent things, known as displaced reference. A speaker can bring distant referents to mind in the absence of any obvious stimuli. Thoughts, notlimitedtothehereandnow, can popinto ourheadsforunfathomable reasons. This ability to think about distant things necessarily precedes the ability to talk about them. Thought precedes meaningful referential communication. A prerequisite for the emergence of human-like meaningful symbolsis that the mental categories they relate to can be invoked even in the absence of immediate stimuli.

1. Thoughts are essential to communication and only humans have the ability to think about objects not present in their surroundings.
2. Theability tothinkaboutobjects notpresentinourenvironment precedes the development of humancommunication.
3. Displaced reference is particular to humans and thoughts pop into our heads for no real reason.
4. Thoughts precede all speech acts and these thoughts pop up in our heads even in the absence of anystimulus.
Q. 31: The passage given below is followed by four alternate summaries. Choose the option that best captures the essence of the passage.

Physicsis a pure science that seeks to understand the behaviour of matterwithout regard to whether it will afford any practical benefit. Engineering is the correlative applied science in which physical theories are putto some specificuse, such as building abridge or a nuclear reactor. Engineersobviously rely heavily onthe discoveriesofphysicists, butanengineer's knowledge of the world is not the same as the physicist's knowledge. In fact, an engineer's know-how will often depend on physical theories that, from the point of view of pure physics, are false. There are some reasons for this. First, theories that are false in the purest and strictestsense arestill sometimes verygood approximations tothe true ones, and often have the addedvirtue ofbeing mucheasiertoworkwith. Second, sometimes thetruetheories apply only under highly idealized conditions which can only be created under controlled experimental situations. Theengineerfinds thatinthe real world, theories rejected by physicists yield more accurate predictions than the ones that they accept.

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1. The relationship between pure and applied science is strictly linear, with the pure science directing applied science, and never the other way round.
2. Though engineering draws heavily from pure science, it contributes to knowledge, by incorporating the constraints and conditions in the real world.
3. The unique task of the engineer is to identify, understand, and interpret the design constraints to produce a successful result.
4. Engineering and physics fundamentally differ on matters like building a bridge or a nuclear reactor.
Q. 32: The passage given below is followed by four alternate summaries. Choose the option that best captures the essence of the passage.

Vance Packard's The Hidden Persuaders alerted the public to the psychoanalytical techniques used bythe advertising industry. Itspremise was that advertising agencies wereusing depth interviews to identify hidden consumer motivations, which were then used to entice consumers to buy goods. Critics and reporters often wrongly assumed that Packard was writing mainly aboutsubliminal advertising. Packard never mentioned the word subliminal, however, and devoted verylittle spacetodiscussionsof"subthreshold"effects. Instead, hisviews largely aligned with the notion that individuals do not always have access to their conscious thoughts and can be persuaded by supraliminal messages without their knowledge.

1. Packard argued that advertising asa 'hidden persuasion' understands thehidden motivations of consumers and works at the subliminal level, on the subconscious level of the awareness of the people targeted.
2. Packard argued that advertising as a 'hidden persuasion' works at the supraliminal level, whereinthe people targeted are aware of being persuaded, after understanding the hidden motivations of consumers and works.
3. Packard held that advertising as a 'hidden persuasion' builds on peoples' conscious thoughts and awareness, by understanding the hidden motivations of consumers and works at the subliminal level.
4. Packard held that advertising as a 'hidden persuasion' understands the hidden motivations of consumers and works at the supraliminal level, though the people targeted have no awareness of being persuaded.

## CAT 2019 Question Paper Slot 1

Q. 33: Five sentences related to a topic are given below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out. Choose its number as your answer and key it in.

1. His idea to use sign language was not a completely new idea as Native Americans used hand gestures to communicate with other tribes.
2. Ancient Greek philosopher Aristotle, for example, observed that men who are deaf are incapable of speech.
3. People who were born deaf were denied the rightto sign a will as they were"presumed to understand nothing; because it is not possible that they have been able to learn to read or write."
4. Pushback against this prejudice began inthe 16th century when Pedro Ponce de León created a formal sign language for the hearing impaired.
5. For millennia, people with hearing impairments encountered marginalization because it was believed that language could only be learned by hearing the spoken word.

Q. 34: Five sentences relatedto atopic are given belowin ajumbled order. Four of them form a coherent and unified paragraph. Identify the odd sentence that does notgo with thefour. Key in the number of the option that you choose.
6. 'Stat' signaled something measurable, while 'matic' advertised free labour; but 'tron', above all, indicated control.
7. It was a totemof high modernism, the intellectual and cultural modethat decreed no processorphenomenon wastoo complexto be grasped, managed and optimized.
8. Like the heraldic shields of ancient knights, these morphemes were painted onto the names of scientific technologies to proclaim one's history and achievements to friends and enemies alike.
9. The historian Robert Proctor at Stanford University calls the suffix '-tron', along with '-matic' and '-stat', embodied symbols.

CAT 2019 Question Paper Slot 1
5. Togainthesuffixwasto acquire a proud and optimisticemblemofthe electronicandatomic age.


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## Logical Reasoning and Data Interpretation

The following table represents addition of two six-digit numbers given in the first and the second rows, while the sumis given inthe third row. In the representation, each of the digits 0 , $1,2,3,4,5,6,7,8,9$ has been coded with one letter among $A, B, C, D, E, F, G, H, J, K$, with distinct letters representing distinct digits.

|  |  | B | H | A | A | G | F |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| + |  | A | H | J | F | K | F |
|  | A | A | F | G | C | A | F |

Q.35: Which digit does the letter A represent?
$\square$
Q.36: Which digit does theletter Brepresent?

Q.37: Which among the digits $3,4,6$ and 7 cannotbe represented by the letter $D$ ?

Q.38: Which among the digits $4,6,7$ and 8 cannotberepresented by the letter $G$ ?


## CAT 2019 Question Paper Slot 1

Princess, Queen, Rani and Samragni were the four finalists in a dance competition. Ashman, Badal, Gagan and Dyu were the four music composers who individually assigned items to the dancers. Each dancer had to individually perform in two dance items assigned by the different composers. The first items performed by the four dancers were all assigned by different music composers. No dancer performed her second item before the performance of the first item by anyotherdancers. Thedancersperformedtheirseconditems inthesame sequence oftheir performance of their first items.

The following additional facts are known.
i. No composer who assigned item to Princess, assigned any item to Queen.
ii. No composer who assigned item to Rani, assigned any item to Samragni.
iii. The first performance was by Princess; this item was assigned by Badal.
iv. The last performance was by Rani; this item was assigned by Gagan.
v. Theitems assigned by Ashman were performed consecutively. The number of performances between items assigned by each of the remaining composers was the same.
Q. 39: Which of the following is true?

1. The second performance was composed by Dyu.
2. The third performance was composed by Ashman.
3. The second performance was composed by Gagan.
4. The third performance was composed by Dyu.
Q. 40: Which of the following is FALSE? NECT\|ASPIRE\|TRANSFORM
5. Queen did not perform in any item composed by Gagan.
6. Rani did not perform in any item composed by Badal.
7. Samragni did not perform in any item composed by Ashman.
8. Princess did not perform in any item composed by Dyu.
Q. 41: The sixth performance was composed by:
9. Gagan
10. Ashman
11. Badal
12. Dyu

CAT 2019 Question Paper Slot 1
Q. 42: Which pair of performances were composed by the same composer?

1. The first and the sixth
2. The second and the sixth
3. The first and the seventh
4. The third and the seventh

Five vendors arebeing considered for aservice. The evaluationcommittee evaluated each vendor on six aspects-Cost, Customer Service, Features, Quality, Reach, and Reliability. Each of these evaluations are on a scale of 0 (worst) to 100 (perfect). The evaluation scores on these aspects are shown in the radar chart. For example, Vendor 1 obtains a score of 52 on Reliability, Vendor 2 obtains a score of 45 on Features and Vendor 3 obtains a score of 90 on Cost.
......... Vendor 1 --- Vendor 2 -Vendor $3 —$ Vendor 4 ---Vendor 5

Q. 43: On which aspect is the median score of the five vendors the least?

1. Customer Service
2. Reliability
3. Cost
4. Quality

## CAT 2019 Question Paper Slot 1

Q. 44: A vendor's final score is the average of their scores on all six aspects. Which vendor has the highest finalscore?

1. Vendor 1
2. Vendor2
3. Vendor 4
4. Vendor3
Q.45: List of all the vendors who are among the top two scorers on the maximum number of aspects is:
5. Vendor 1 and Vendor 5
6. Vendor 2, Vendor 3 and Vendor 4
7. Vendor 2 and Vendor 5
8. Vendor 1 and Vendor 2
Q. 46: List of all the vendors who are among the top three vendors on all six aspects is:
9. Vendor 1
10. Vendor 1 and Vendor 3
11. Vendor 3
12. None of the Vendors

Six players - Tanzi, Umeza, Wangdu, Xyla, Yonita and Zeneca competed in an archery tournament. The tournament had three compulsory rounds, Rounds 1 to 3. In each round every player shot an arrow at a target. Hitting the centre of the target (called bull's eye)fetched the highest score of 5 . The only other possible scores that a player could achieve were 4, 3, 2 and 1 . Every bull's eye score in the firstthree rounds gave a playerone additional chance to shootin thebonus rounds, Rounds 4 to6. ThepossiblescoresinRounds 4 to 6 were identical tothefirst three.

A player's total score in the tournament was the sum of his/her scores in all rounds played by him/her. The table below presents partial information on points scored by the players after completion of the tournament. In the table, NP means that the player did not participate inthat round, while a hyphen means that the player participated in that round and the score information is missing.

CAT 2019 Question Paper Slot 1

|  | Round-1 | Round-2 | Round-3 | Round-4 | Round-5 | Round-6 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Tanzi | - | 4 | - | 5 | NP | NP |
| Umeza | - | - | - | 1 | 2 | NP |
| Wangdu | - | 4 | - | NP | NP | NP |
| Xyla | - | - | - | 1 | 5 | - |
| Yonita | - | - | 3 | 5 | NP | NP |
| Zeneca | - | - | - | 5 | 5 | NP |

The following facts are also known.

1. Tanzi, Umeza and Yonita had the same total score.
2. Total scores for all players, except one, were in multiples of three.
3. The highest total score was one more than double of the lowest total score.
4. The number of players hitting bull's eye in Round 2 was double of that in Round 3.
5. Tanzi andZeneca had the same score in Round 1 but different scores in Round 3.
Q. 47: What was the highest total score?
6. 24
7. 21
8. 25
9. 23
Q. 48: What was Zeneca's total score?
10. 22
11. 23
12. 21
13. 24
Q. 49: Which of the following statements is true?
14. Zeneca's score was23.
15. Xyla was the highest scorer.
16. Zeneca was the highest scorer.
17. Xyla's score was 23.
Q. 50: What was Tanzi's score in Round 3?
18. 4
19. 3

CAT 2019 Question Paper Slot 1
3. 1
4. 5

Thefigurebelowshows the street mapforacertainregion withthe streetintersections marked from a throughl. A person standing at an intersection can see along straightlines to other intersections that are in her line of sight and all other people standing at these intersections. For example, a person standing at intersection g can see all people standing at intersections $b$, $c, e, f, h$, and $k$. In particular, the person standing at intersection $g$ can see the person standing at intersection e irrespective of whether there is a person standing at intersection $f$.


Six people $\mathrm{U}, \mathrm{V}, \mathrm{W}, \mathrm{X}, \mathrm{Y}$, and Z , are standing at different intersections. No two people are standing at the same intersection.

The following additional facts are known.

1. $X, U$, and $Z$ are standing at the three corners of atriangle formed by three street segments.
2. X can see only $U$ and $Z$.
3. Y can see only $U$ and $W$.
4. $U$ sees $V$ standing in the next intersection behind $Z$.
5. W cannot see V or $Z$.
6. No one among the six is standing at intersection d.
Q. 51: Who is standing at intersection $a$ ?
7. No one
8. V
9. W
10. $Y$

CAT 2019 Question Paper Slot 1
Q. 52: Who can $V$ see?

1. U only
2. U, W and Z only
3. U and Zonly
4. Zonly
Q. 53: What is the minimum number of street segments that $X$ must cross to reach $Y$ ?
5. 2
6. 3
7. 1
8. 4
Q. 54: Should a new person stand at intersection $d$, who among the six would she see?
9. U and Z only
10. V and $X$ only
11. W and X only
12. UandWonly


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## CAT 2019 Question Paper Slot 1

The Ministry of Home Affairs is analysing crimes committed by foreigners in different states and unionterritories(UT) of India. All cases refertotheones registeredagainstforeignersin2016.

The number of cases -classified intothree categories:IPC crimes, SLL crimes and other crimes - for nine states/UTs are shown in the figure below. These nine belong to the top ten states/UTs in terms of the total number of cases registered. The remaining state (among top ten) is West Bengal, where all the 520 cases registered were SLL crimes.
 IPC crimes $\quad$ SLL crimes

IIII Other Crimes

The table below shows the ranks of the ten states/UTs mentioned above among ALL states/UTs of India in terms of the number of cases registered in each of the three category of crimes. A state/UTis given rank rfora category of crimes ifthere are (râ€•1) states/UTs having alarger number of cases registered in that category of crimes. For example, if two states have the same number of cases in a category, and exactly three other states/UTs have larger numbers of cases registeredinthesame category, thenboththestates aregiven rank4inthatcategory. Missing ranks in the table are denoted by *.

CAT 2019 Question Paper Slot 1

|  | IPC crimes | SLL crimes | Other Crimes |
| :--- | :---: | :---: | :---: |
| Delhi | $*$ | $*$ | $*$ |
| Goa | $*$ | 4 | $*$ |
| Haryana | 8 | 6 | $*$ |
| Karnataka | 3 | 2 | $*$ |
| Kerala | $*$ | 9 | $*$ |
| Maharashtra | 3 | 4 | 8 |
| Puducherry | 13 | 29 | $*$ |
| Tamil Nadu | 11 | 7 | $*$ |
| Telangana | 6 | 9 | 8 |
| West Bengal | 17 | $*$ | 16 |

Q. 55: What is the rank of Kerala in the 'IPC crimes' category?

Q. 56: In the two states where the highest total number of cases are registered, the ratio of the total number of cases in IPC crimes to the total number in SLL crimes is closest to

1. $1: 9$
2. $11: 10$
3. 3:2
4. 19:20
Q. 57: Which of the following is DEFINITELY true about the ranks of states/UT in the 'other crimes' category?
i) Tamil Nadu: 2
ii) Puducherry: 3
5. both i) andii)
6. neither i), nor ii)
7. only ii)
8. only i)

## CAT 2019 Question Paper Slot 1

Q. 58: What is the sum of the ranks of Delhi in the three categories of crimes?
$\square$

A new game show on TV has 100 boxes numbered $1,2, \ldots, 100$ in a row, each containing a mystery prize. The prizes are items of differenttypes, $a, b, c, \ldots$, indecreasing order of value. Themostexpensive itemis oftypea, adiamond ring, andthereisexactlyoneofthese. Youare told that the number of items at least doubles as you move tothe nexttype. For example, there would be at least twice as many items of type b as of type a, at least twice as many items of type cas of type b and so on. There is no particular order in which the prizes are placed in the boxes.
Q. 59: What is the minimum possible number of different types of prizes?
$\square$
Q. 60: What is the maximum possible number of different types of prizes?

Q. 61: Which of the following is not possible?

1. There are exactly 30 items of type b.
2. There are exactly 45 items of type $c$.
3. There are exactly 75 items of type e.
4. There are exactly 60 items of type $d$.
Q. 62: You ask for the type of item in box 45. Instead of being given a direct answer, you are told that there are 31 items of the same type as box 45 in boxes 1 to 44 and 43 items of the same type as box 45 in boxes 46 to 100 .

What is the maximum possible number of different types of items?

1. 6
2. 3
3. 5
4. 4

A supermarkethastoplace12items(coded AtoL) in shelves numbered 1 to 16. Five of these items aretypes ofbiscuits, three aretypes ofcandies and therestaretypes of savouries. Only one item can be kept in a shelf. Items are to be placed such that all items of same type are clustered together with no empty shelfbetween items of the sametype and atleast one empty shelfbetween two differenttypes ofitems. At mosttwoempty shelves canhaveconsecutive numbers.

The following additional facts are known.

1. A and $B$ are to be placed in consecutively numbered shelves in increasing order
2. I and $J$ are to be placed in consecutively numbered shelves both higher numbered than the shelves in which $A$ and $B$ are kept.
3. D, E and $F$ are savouries and are to be placed in consecutively numbered shelves in increasing order after all the biscuits and candies.
4. K is to be placed in shelf number 16.
5. L and $J$ are items of the same type, while $H$ is an item of a different type.
6. C is a candy and is to be placed in a shelf preceded by two empty shelves.
7. $L$ is to be placed in a shelf preceded by exactly one empty shelf.
Q. 63: In how many different ways can the items be arranged on the shelves?
8. 2
9. 8

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3. 4
4. 1
Q. 64: Which of the following items is not a type of biscuit?

1. $G$
2. B
3. L
4. A

CAT 2019 Question Paper Slot 1
Q.65: Whichofthefollowing can representthe numbers of theempty shelves ina possible arrangement?

1. $1,7,11,12$
2. $1,5,6,12$
3. 1,2,6,12
4. $1,2,8,12$
Q. 66: Which of the following statements is necessarily true?
5. There are two empty shelves between the biscuits and the candies.
6. All biscuits are kept before candies.
7. There are at least four shelves between items
8. All candies are kept before biscuits.


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## Quantitative Ability

Q. 67: If m and n are integers such that (2) $)^{19} 3^{4} 4^{2} 9^{m} 8^{n}=3^{n} \sqrt{6^{m}}\left({ }^{4} 64\right)$ then m is

1. -20
2. -12
3. -24
4. -16
Q.68: Theincome of Amalais20\%morethanthat of Bimala and20\%lessthanthat of Kamala. IfKamala's incomegoes downby 4\%and Bimala'sgoes upby 10\%, thenthe percentageby which Kamala's income would exceed Bimala's is nearest to
5. 31
6. 28
7. 32
8. 29
Q. 69: In a class, $60 \%$ of the students are girls and the rest are boys. There are 30 more girls than boys. If $68 \%$ of the students, including 30 boys, pass an examination, the percentage of the girls who do not pass is


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Q.70: Onsellingapenat5\%lossandabookat15\%gain, KarimgainsRs.7.Ifhe sellsthe pen at 5\% gain and the book at 10\% gain, he gains Rs. 13. What is the cost price of the bookin Rupees?

1. 80
2. 85
3. 95
4. 100
Q.71: Cornersarecutofffromanequilateral triangleTto producearegularhexagonH.

Then, the ratio of the area of H to the area of T is

1. 5: 6
2. $4: 5$
3. $3: 4$
4. $2: 3$
Q. 72: Let $S$ be the set of all points $(x, y)$ in the $x-y$ plane such that $|x|+|y| \leq 2$ and $|x| \geq 1$. Then, the area, in square units, of the region represented by $S$ equals

Q.73: Ramesh and Gautam are among 22students who write an examination. Ramesh scores 82.5. Theaveragescoreofthe 21 studentsotherthan Gautamis62. Theaverage score of all the 22 students is one more than the average score of the 21 students other than Ramesh. The score of Gautamis
5. 49
6. 48
7. 51
8. 53
Q. 74: At their usual efficiency levels, $A$ and $B$ together finish a task in 12 days. If $A$ had worked half as efficiently as she usually does, and $B$ had worked thrice as efficiently as he usually does, the task would have been completed in 9 days. How many days would A take to finishthe task if she works alone at her usual efficiency?
9. 24
10. 18
11. 12
12. 36
Q. 75: If $a_{1}, a_{2}, \ldots$ are in A.P., $\quad \frac{1}{\sqrt{a_{1}}+\sqrt{a_{2}}}+\frac{1}{\sqrt{a_{2}}+\sqrt{a_{3}}}+\cdots+\frac{1}{\sqrt{a_{n}}+\sqrt{a_{n+1}}}$
then,
13. $\frac{n-1}{\sqrt{a_{1}}+\sqrt{a_{n-1}}}$
14. 

$$
\frac{n}{\sqrt{a_{1}}+\sqrt{a_{n+1}}}
$$

CAT 2019 Question Paper Slot 1
3. $\frac{n-1}{\sqrt{a_{1}}+\sqrt{a_{n}}}$
4. $\frac{n}{\sqrt{a_{1}}-\sqrt{a_{n+1}}}$
Q.76: In a circle of radius $11 \mathrm{~cm}, C D$ is adiameter and $A B$ is achord of length 20.5 cm . If $A B$ and CDintersectat a point Einside the circle and CE has length 7 cm , then the difference of the lengths of $B E$ and $A E$, in $c m$, is

1. 2.5
2. 3.5
3. 0.5
4. 1.5
Q.77: With rectangularaxes of coordinates, the number of paths from $(1,1)$ to $(8,10)$ via $(4,6)$, where each step from any point $(x, y)$ is either to $(x, y+1)$ or to $(x+1, y)$, is

Q. 78: Amala, Bina, and Gouri invest money in the ratio $3: 4: 5$ in fixed deposits having respective annual interestrates in the ratio 6:5:4. What is their total interestincome (in Rs) after a year, if Bina's interest income exceeds Amala's by Rs 250?
5. 6350
6. 7250
7. 7000
8. 6000
Q.79: Aclubhas 256 members of whom144canplayfootball, 123 can playtennis, and 132 can play cricket. Moreover, 58 members canplay bothfootball andtennis, 25can playboth cricket and tennis, while 63 can play both football and cricket. Ifevery member can play at least one game, then the number of members who can play only tennis is
9. 45
10. 38
11. 32
12. 43

## CAT 2019 Question Paper Slot 1

Q. 80: LetT bethe triangle formed by the straightline $3 x+5 y-45=0$ and the coordinate axes. Letthecircumcircle of Thave radius oflengthL, measuredinthe sameunit asthe coordinate axes. Then, the integer closest to $L$ is
$\qquad$
Q.81: Threemen andeightmachinescanfinishajobinhalfthe timetaken by three machines and eight men to finish the same job. If two machines can finish the job in 13 days, thenhow many men can finish the job in 13 days?
$\square$
Q. 82: Two cars travel the same distance starting at 10:00 am and 11:00 am, respectively, on the same day. They reach their common destination at the same point oftime. If the first car travelled for at least 6 hours, then the highest possible value of the percentage by whichthe speed of the second car could exceed that of the first car is

1. 30
2. 25
3. 10
4. 20
Q. 83: If $(5.55)^{x}=(0.555)^{y}=\quad$ then the value of $\frac{1}{x}-\frac{1}{y}$ is
1000,
5. 3
6. 1

1
3. $\frac{}{3}$

2
4. $\frac{}{3}$
Q. 84: The product of the distinct roots $\mid x^{2}-x-6=x+2$ is
of

1. -8
2. -24
3. -4
4. -16

## CAT 2019 Question Paper Slot 1

Q. 85: The wheels of bicycles $A$ and $B$ have radii 30 cm and 40 cm , respectively. While traveling acertain distance, each wheel of A required 5000 more revolutions than each wheel of $B$. If bicycle $B$ traveled this distance in 45 minutes, then its speed, in km per hour, was

1. $18 \pi$
2. $12 \pi$
3. $16 \pi$
4. $14 \pi$
Q. 86: $A B$ is a diameter of a circle of radius 5 cm . Let $P$ and $Q$ be two points on the circle so that the length of $P B$ is 6 cm , and the length of $A P$ is twice that of $A Q$. Then the length, in cm , of QB is nearest to
5. 7.8
6. 8.5
7. 9.1
8. 9.3
Q. 87: For any positive integer $n$, $\operatorname{let} f(n)=n(n+1)$ if $n$ is even, and $f(n)=n+3$ if $n$ is odd. If $m$ is a positive integer such that $8 f(m+1)-f(m)=2$, then $m$ equals
Q. 88: A chemist mixes two liquids 1 and 2 . One litre of liquid 1 weighs 1 kg and one litre of liquid 2 weighs 800 gm . If halflitre of the mixture weighs 480 gm , thenthe percentage ofliquid 1 in the mixture, in terms of volume, is
9. 85
10. 70
11. 75
12. 80
Q. 89: If $q+{ }_{2}+a_{3}+\ldots+a=3\left(2^{n+1}-2\right)$, for every $n \geq 1$, then $a_{11}$ equals a
$\square$
Q. 90: Consider a function $f$ satisfying $f(x+y)=f(x) f(y)$ where $\mathbf{x}$, y are positive integers, and $f(1)=2$. If $f(a+1)+f(a+2)+\ldots+f(a+n)=16\left(2^{n}-1\right)$ then a is equal to
$\qquad$
Q. 91: The number of the real roots of the equation $2 \cos (x(x+1))=2^{x}+2^{-x}$ is
13. 2
14. 1
15. infinite
16. 0
Q. 92: Let $x$ and $y$ be positive real numbers such that $\log _{5}(x+y)+\log _{5}(x-y)=3$, and $\log _{2} y-\log _{2} x=1-\log _{2} 3$. Then xy equals
17. 250
18. 25
19. 100
20. 150
Q. 93: One can use three different transports which move at 10,20 , and 30 kmph , respectively. To reach from A to B, Amal took each mode of transport $1 / 3$ of his total journey time, while Bimaltookeach mode of transport $1 / 3$ ofthetotaldistance. The percentageby whichBimal's travel time exceeds Amal's travel time is nearest to
21. 21
22. 22
23. 20
24. 19
Q. 94: If the rectangular faces of a brick have their diagonals in the ratio $3: \sqrt{3}: \sqrt{15}$, then the ratio of the length of the shortest edge of the brick to that of its longest edge is
25. $\sqrt{3}: 2$
26. $2: \sqrt{5}$
27. $1: \sqrt{3}$
28. $\sqrt{2}: \sqrt{3}$

## CAT 2019 Question Paper Slot 1

Q. 95: If the population of a town is pinthe beginning of any year then it becomes $3+2 p$ in the beginning of the next year. If the population in the beginning of 2019 is 1000, then the population in the beginning of 2034 will be

1. $(997) 2^{14}+3$
2. $(1003)^{15}+6$
3. $(1003) 2^{15}-3$
4. $(997)^{15}-3$
Q. 96: A person invested a total amount of Rs 15 lakh. A part of it was invested in a fixed deposit earning 6\% annual interest, and the remaining amount was invested in two other deposits inthe ratio 2:1, earning annualinterestatthe ratesof4\%and3\%, respectively. If the total annual interest income is Rs 76000 then the amount(in Rslakh) invested in the fixed deposit was

Q.97: Meena scores $40 \%$ in an examination and after review, even though her score is increased by $50 \%$, she fails by 35 marks. If her post-review score is increased by $20 \%$, she will have7marks morethanthepassingscore. Thepercentagescoreneededforpassing the examination is
5. 70
6. 60
7. 75
8. 80
Q. 98: In a race of three horses, the first beat the second by 11 metres and the third by 90 metres. Ifthe second beat the third by 80 metres, what was the length, in metres, of the racecourse?

Q. 99: The number of solutions to the equation $|x|\left(6 x^{2}+1\right)=5 x^{2}$ is
$\square$

CAT 2019 Question Paper Slot 1
Q. 100: The product of two positive numbers is 616 . If the ratio of the difference of their cubes to the cube of their difference is 157:3, then the sum of the two numbers is

1. 58
2. 50
3. 95
4. 85


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## CAT 2019 Question Paper Slot 1

| Answer Keys |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Questio n No. | Answer Key | $\begin{gathered} \text { Questio } \\ \mathrm{n} \\ \text { No. } \\ \hline \end{gathered}$ | Answer Key | $\begin{gathered} \text { Questio } \\ \text { n } \\ \text { No. } \\ \hline \end{gathered}$ | Answer Key | $\begin{gathered} \text { Questio } \\ \text { n } \\ \text { No. } \\ \hline \end{gathered}$ | Answer Key |
| 1 | Option: 1 | 26 | 3241 | 51 | Option: 1 | 76 | Option: 3 |
| 2 | Option: 3 | 27 | Option: 1 | 52 | Option: 3 | 77 | 3920 |
| 3 | Option: 2 | 28 | 4123 | 53 | Option: 1 | 78 | Option: 2 |
| 4 | Option: 1 | 29 | 3241 | 54 | Option: 3 | 79 | Option: 4 |
| 5 | Option: 1 | 30 | Option: 2 | 55 | 5 | 80 | 9 |
| 6 | Option: 1 | 31 | Option: 2 | 56 | Option: 1 | 81 | 13 |
| 7 | Option: 2 | 32 | Option: 4 | 57 | Option: 1 | 82 | Option: 4 |
| 8 | Option: 4 | 33 | 2 | 58 | 5 | 83 | Option: 3 |
| 9 | Option: 3 | 34 | 2 | 59 | 2 | 84 | Option: 4 |
| 10 | Option: 3 | 35 | 1 | 60 | 6 | 85 | Option: 2 |
| 11 | Option: 2 | 36 | 9 | 61 | Option: 2 | 86 | Option: 3 |
| 12 | Option: 2 | 37 | 7 | 62 | Option: 3 | 87 | 10 |
| 13 | Option: 2 | 38 | 6 | 63 | Option: 2 | 88 | Option: 4 |
| 14 | Option: 2 | 39 | Option: 1 | 64 | Option: 1 | 89 | 6144 |
| 15 | Option: 3 | 40 | Option: 1 | 65 | Option: 3 | 90 | 3 |
| 16 | Option: 3 | 41 | Option: 3 | 66 | Option: 3 | 91 | Option: 2 |
| 17 | Option: 1 | 42 | Option: 1 | 67 | Option: 2 | 92 | Option: 4 |
| 18 | Option: 2 | 43 | Option: 1 | 68 | Option: 1 | 93 | Option: 2 |
| 19 | Option: 3 | 44 | Option: 4 | 69 | 20 | 94 | Option: 3 |
| 20 | Option: 4 | 45 | Option: 1 | 70 | Option: 1 | 95 | Option: 3 |
| 21 | Option: 2 | 46 | Option: 3 | 71 | Option: 4 | 96 | 9 |
| 22 | Option: 1 | 47 | Option: 3 | 72 | 2 | 97 | Option: 1 |
| 23 | Option: 1 | 48 | Option: 4 | 73 | Option: 3 | 98 | 880 |
| 24 | Option: 2 | 49 | Option: 2 | 74 | Option: 2 | 99 | 5 |
| 25 | 2341 | 50 | Option: 3 | 75 | Option: 2 | 100 | Option: 2 |

