Directions of Test

Test Name	Actual CAT 2019 Slot I	Total Questions	100	Total Time	180 Mins

Section Name	No. of Questions	Time limit	Marks per Question	Negative Marking
Verbal Ability	34	1:0(h:m)	3	1/3
DI & Reasoning	32	1:0(h:m)	3	1/3
Quantitative Ability	34	1:0(h:m)	3	1/3

Section : Verbal Ability

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 1

Contemporary internet shopping conjures a perfect storm of choice 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 an endless sea of choice online has become a cottage industry unto itself. Many brands and retailers now wield marketing buzzwords such as curation, differentiation, and discovery as they attempt to sell an assortment of stuff targeted to their ideal customer. Companies find such shoppers through the data gold mine of digital advertising, which can catalog people by gender, income level, personal interests, and more. Since Americans have lost the ability to sort through the sheer volume of the consumer choices available to them, a ghost now has to be in the retail machine, whether it's an algorithm, an influencer, or some snazzy ad tech to help a 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...

For a relatively new class of consumer-products start-ups, there's another method entirely. Instead of making sense of a sea of existing stuff, these companies claim to disrupt stuff 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 certain tier of consumer, but the 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, the opportunity to buy even basic things such as fresh food or quality 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 into bedroom furniture and bed linens. Glossier, after years of marketing itself as 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.

Which one of the following best sums up the overall purpose of the examples of Casper and Glossier in the passage?

A) They are increasing the purchasing power of poor Americans.
B) They might transform into what they were exceptions to.
C) They are exceptions to a dominant trend in consumer markets
D) They are facilitating a uniform distribution of commodities in the market

Question No. : 2

All of the following, IF TRUE, would weaken the author's claims EXCEPT:

A) the empowerment felt by purchasers in buying a commodity were directly proportional to the number of options they could choose from
B) the annual sales growth of companies with fewer product options were higher than that of companies which curated their products for target consumers
C) the annual sale of companies that hired lifestyle influencers on Instagram for marketing their products were 40% less than those that did not
D) product options increased market competition, bringing down the prices of commodities, which, in turn, increased purchasing power of the poor.

Question No. : 3

A new food brand plans to launch a series of products in the American market. Which of the following product plans is most likely to be supported by the author of the passage?

A) A range of 10 products priced between $10 and $25. B) A range of 10 products priced between $5 and $10
C) A range of 25 products priced between $10 and $25 D) A range of 25 products priced between $5 and $10

Question No. : 4

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?

A) Start-ups with few product options are no exception to the American consumer market that is deeply divided along class lines
B) With the motive of promoting certain rival companies, the government decides to double the tax-rates for these start-ups
C) An exponential surge in their sales enables start-ups to meet their desired profit goals without expanding their product catalogue.
D) With Casper and Glossier venturing into new product ranges, their regular customers start losing trust in the companies and their products

Question No. : 5

Based on the passage, all of the following can be inferred about consumer behaviour EXCEPT that:

A) too many options have made it difficult for consumers to trust products
B) consumers tend to prefer products by start-ups over those by established companies
C) consumers are susceptible to marketing images that they see on social media
D) having too many product options can be overwhelming for consumers

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 6

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 outer surface of their plumage below the temperature of the surrounding air. At the 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 air temperature was 0.32 degrees Fahrenheit. At the same time, the majority of the plumage covering the penguins' bodies was even colder: the surface of their warmest body part, their feet, was an average 1.76 degrees Fahrenheit, but the plumage on their heads, chests and backs were -1.84, -7.24 and -9.76 degrees Fahrenheit respectively. Overall, nearly the entire outer surface of the penguins' bodies was below freezing at all times, except for their eyes and beaks. The scientists also used a computer simulation to determine how much heat was lost or gained from each part of the body—and discovered that by keeping their outer surface below air temperature, 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.

The penguins do lose internal body heat to the surrounding air through thermal radiation, just as our bodies do on a cold day. Because their bodies (but not surface plumage) are warmer than the surrounding air, heat gradually radiates outward over time, moving from a warmer material to a colder 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 showed that they might gain back a little of this heat through thermal convection—the transfer of heat via the movement of a fluid (in this case, the air). As the cold Antarctic air cycles around their bodies, slightly warmer air comes into contact with the plumage and donates minute amounts of heat back to the penguins, then cycles away at a slightly colder temperature.

Most of this heat, the researchers note, probably doesn't make it all the way through the plumage and back to the penguins' bodies, but it could make a slight difference. At the very least, the method by which a penguin's plumage wicks heat from the bitterly cold air that surrounds it helps to cancel out some of the heat that's radiating from its interior. And given the Emperors' unusually demanding breeding cycle, every bit of warmth counts. Since [penguins trek as far as 75 miles to the coast to breed and male penguins] don't eat anything during [the incubation period of 64 days], conserving calories by giving up as little heat as possible is absolutely crucial.

All of the following, if true, would negate the findings of the study reported in the passage EXCEPT:

A) the average temperature of the feet of penguins in the month of June 2008 were found to be 2.76 degrees Fahrenheit.
B) the penguins' plumage were made of a material that did not allow any heat transfer through convection or radiation.
C) 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.
D) the average air temperature recorded during the month of June 2008 in the area of study were –10 degrees Fahrenheit.

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

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Which of the following can be responsible for Emperor Penguins losing body heat?

A) Plumage B) Reproduction process C) Food metabolism D) Thermal convection

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

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Which of the following best explains the purpose of the word "paradoxically" as used by the author?

A) Keeping a part of their body colder helps penguins keep their bodies warmer
B) Heat loss through radiation happens despite the heat gain through convection
C) Heat gain through radiation happens despite the heat loss through convection
D) Keeping their body colder helps penguins keep their plumage warmer

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 9

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In the last sentence of paragraph 3, "slightly warmer air" and "at a slightly colder temperature" refer to AND respectively:

A) the cold Antarctic air which becomes warmer because of the heat radiated out from penguins' bodies AND the fall in temperature of the surrounding air after thermal convection
B) the cold Antarctic air whose temperature is higher than that of the plumage AND the fall in temperature of the Antarctic air after it has transmitted some heat to the plumage
C) the air trapped in the plumage which is warmer than the Antarctic air AND the fall in temperature of the trapped plumage air after it radiates out some heat.
D) 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

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 10

"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 anti- capitalist conservationism (not conservatism) that solaced itself with the vision of a pre- industrial 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 it or appropriate it for political or cultural 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 radical William Morris now cover genteel sofas, so the revolutionary intentions of many folk historians and revivalists have led 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 music festivals, awards ceremonies and on TV, reissued on countless record labels. Folk is a sonic "shabby chic", containing elements of the uncanny and eerie, as well as an antique veneer, a whiff of Britain's 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, a living example of an art form in a perpetual state of renewal. "One man sings a song, and then others sing it after him, changing what they do not like" is the most concise summary of his conclusions on its origins. He compared each rendition of a ballad to an acorn 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 spark was communism's dream of a post-revolutionary New Jerusalem. For their younger successors in the 60s, who thronged the folk clubs set up by the old guard, the lyrical freedom of Dylan and the unchained melodies of psychedelia created the conditions for folk- rock's own golden age, a brief Indian summer that lasted from about 1969 to 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....

The primary purpose of the reference to William Morris and his floral prints is to show:

A) the pervasive influence of folk on contemporary art, culture, and fashion.
B) that despite its archaic origins, folk continues to remain a popular tradition
C) that what was once derided as genteel is now considered revolutionary.
D) that what is once regarded as radical in folk, can later be seen as conformist

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 11

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Which of the following statements about folk revivalism of the 1940s and 1960s cannot be inferred from the passage?

A) Even though it led to folk-rock's golden age, it wasn't entirely free from critique
B) It reinforced Cecil Sharp's observation about folk's constant transformation
C) Freedom and rebellion were popular themes during the second wave of folk revivalism
D) Electrification of music would not have happened without the influence of rock music

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 12

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The author says that folk "may often appear a cosy, fossilised form" because:

A) it has been arrogated for various political and cultural purposes B) of its nostalgic association with a pre-industrial past.
C) folk is a sonic "shabby chic" with an antique veneer D) the notion of folk has led to several debates and disagreements

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 13

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All of the following are causes for plurality and diversity within the British folk tradition EXCEPT:

A) paradoxically, folk forms are both popular and unpopular
B) that British folk forms can be traced to the remote past of the country.
C) the fluidity of folk forms owing to their history of oral mode of transmission.
D) that British folk continues to have traces of pagan influence from the dark ages.

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 14

"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 anti- capitalist conservationism (not conservatism) that solaced itself with the vision of a pre- industrial 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 it or appropriate it for political or cultural 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 radical William Morris now cover genteel sofas, so the revolutionary intentions of many folk historians and revivalists have led 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 music festivals, awards ceremonies and on TV, reissued on countless record labels. Folk is a sonic "shabby chic", containing elements of the uncanny and eerie, as well as an antique veneer, a whiff of Britain's 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, a living example of an art form in a perpetual state of renewal. "One man sings a song, and then others sing it after him, changing what they do not like" is the most concise summary of his conclusions on its origins. He compared each rendition of a ballad to an acorn 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 spark was communism's dream of a post-revolutionary New Jerusalem. For their younger successors in the 60s, who thronged the folk clubs set up by the old guard, the lyrical freedom of Dylan and the unchained melodies of psychedelia created the conditions for folk- rock's own golden age, a brief Indian summer that lasted from about 1969 to 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....

At a conference on folk forms, the author of the passage is least likely to agree with which one of the following views?

A) The plurality and democratising impulse of folk forms emanate from the improvisation that its practitioners bring to it.
B) Folk forms, in their ability to constantly adapt to the changing world, exhibit an unusual poise and homogeneity with each change.
C) The power of folk resides in its contradictory ability to influence and be influenced by the present while remaining rooted in the past.
D) Folk forms, despite their archaic origins, remain intellectually relevant in contemporary times.

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 15

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 emotions— indeed, many people feel utterly indifferent toward the environments that shape their lives— but 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. A brilliantly colored rainbow after gloomy afternoon showers, a busy city street alive with human interaction—one might experience the beauty of such landscapes that had seemed quite ordinary only moments before or that are being newly discovered. This is quite the opposite of a second topophilic bond, namely that of the acquired taste for certain landscapes 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 than those predicated purely on the visual. A third response to the environment 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 inspired recent architects and planners. Most notably, new urbanism 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, but their intensity rarely is long- lasting. 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 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 have disclosed how important it is to maintain their 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 of fear cast a dark shadow over a place that makes one feel a sense of dread or anxiety—or topophobia.

Which one of the following comes closest in meaning to the author's understanding of topophilia?

A) The tendency of many cultures to represent their land as "motherland" or "fatherland" may be seen as an expression of their topophilia
B) Scientists have found that most creatures, including humans, are either born with or cultivate a strong sense of topography.
C) The French are not overly patriotic, but they will refuse to use English as far as possible, even when they know it well.
D) Nomadic societies are known to have the least affinity for the lands through which they traverse because they tend to be topophobic.

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 16

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The word "topophobia" in the passage is used:

A) to signify feelings of fear or anxiety towards topophilic people.
B) as a metaphor expressing the failure of the homeland to accommodate non-citizens
C) to represent a feeling of dread towards particular spaces and places
D) to signify the fear of studying the complex discipline of topography.

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 17

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

A) The deep anomie of modern urbanisation led to new urbanism's intricate sense of place
B) Philosopher-architects are uniquely suited to develop topophilic design.
C) People's responses to their environment are usually subjective and so cannot be rendered in design
D) Architects have to objectively quantify spaces and hence cannot be topophilic

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 18

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In the last paragraph, the author uses the example of "Residents of upscale residential developments" to illustrate the:

A) sensitive response to race and class problems in upscale residential developments
B) manner in which environments are designed to minimise the social exclusion of their clientele
C) introduction of nationalist projects by such elites to produce a sense of dread or topophobia
D) social exclusivism practised by such residents in order to enforce a sense of racial or class superiority

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 19

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Which of the following statements, if true, could be seen as not contradicting the arguments in the passage?

A) Generally speaking, in a given culture, the ties of the people to their environment vary little in significance or intensity.
B) New Urbanism succeeded in those designs where architects collaborated with their clients.
C) The most important, even fundamental, response to our environment is our tactile and olfactory response.
D) Patriotism, usually seen as a positive feeling, is presented by the author as a darker form of topophilia.

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 20

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 incomplete manuscript of a medieval Arabic story collection. . . But, though those tales were of 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 never credited Diyab in his published translations of the Arabian Nights stories, Diyab wrote something of his own: a travelogue penned in the mid-18th century. In it, he recalls telling Galland the 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 believes that "Aladdin might be the young Arab Maronite from Aleppo, marveling at the jewels 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 same time, or that the story was invented in that 18th century period as a byproduct of French Orientalism, a fascination with stereotypical exotic Middle Eastern luxuries that was prevalent then. The idea that Diyab might have based it on his own life — the experiences of a Middle Eastern man encountering the French, not vice-versa — flips the script. [According to Horta,] "Diyab was ideally 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't the only reason storytellers keep finding reason to return to Aladdin. It reflects not only "a history of the French and the Middle East, but also [a story about] Middle Easterners coming to Paris and that speaks to our world today," as Horta puts it. "The day Diyab told the story of Aladdin to Galland, there were riots due to food shortages during the winter and spring of 1708 to 1709, and Diyab was sensitive 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's memoir reveals a narrator adept at capturing the distinctive psychology of a young protagonist, as well as recognizing the kinds of injustices and opportunities that can transform the path of any youthful adventurer."

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

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

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

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The author of the passage is most likely to agree with which of the following explanations for the origins of the story of Aladdin?

A) Basing it on his own life experiences, Diyab transmitted the story of Aladdin to Galland who included it in Arabian Nights
B) Galland received the story of Aladdin from Diyab who, in turn, found it in an incomplete medieval manuscript.
C) Galland derived the story of Aladdin from Diyab's travelogue in which he recounts his fascination with the wealth of Versailles.
D) The story of Aladdin has its origins in an undiscovered, incomplete manuscript of a medieval Arabic collection of stories

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

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All of the following serve as evidence for the character of Aladdin being based on Hanna Diyab EXCEPT:

A) Diyab's narration of the original story to Galland B) Diyab's cosmopolitanism and cross-cultural experience
C) Diyab's description of the wealth of Versailles in his travelogue
D) Diyab's humble origins and class struggles, as recounted in his travelogue

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 23

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Which of the following is the primary reason for why storytellers are still fascinated by the story of Aladdin?

A) The story of Aladdin is evidence of the eighteenth century French Orientalist attitude
B) The tale of Aladdin documents the history of Europe and Middle East
C) The traveller's experience that inspired the tale of Aladdin resonates even today
D) The archetype of the rags-to-riches story of Aladdin makes it popular even today

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 24

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 incomplete manuscript of a medieval Arabic story collection. . . But, though those tales were of 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 never credited Diyab in his published translations of the Arabian Nights stories, Diyab wrote something of his own: a travelogue penned in the mid-18th century. In it, he recalls telling Galland the 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 believes that "Aladdin might be the young Arab Maronite from Aleppo, marveling at the jewels 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 same time, or that the story was invented in that 18th century period as a byproduct of French Orientalism, a fascination with stereotypical exotic Middle Eastern luxuries that was prevalent then. The idea that Diyab might have based it on his own life — the experiences of a Middle Eastern man encountering the French, not vice-versa — flips the script. [According to Horta,] "Diyab was ideally 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't the only reason storytellers keep finding reason to return to Aladdin. It reflects not only "a history of the French and the Middle East, but also [a story about] Middle Easterners coming to Paris and that speaks to our world today," as Horta puts it. "The day Diyab told the story of Aladdin to Galland, there were riots due to food shortages during the winter and spring of 1708 to 1709, and Diyab was sensitive 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's memoir reveals a narrator adept at capturing the distinctive psychology of a young protagonist, as well as recognizing the kinds of injustices and opportunities that can transform the path of any youthful adventurer."

Which of the following does not contribute to the passage's claim about the authorship of Aladdin?

A) The story-line of many French fairy tales of the 18th century B) The narrative sensibility of Diyab's travelogue.
C) The depiction of the affluence of Versailles in Diyab's travelogue D) Galland's acknowledgment of Diyab in his diary

DIRECTIONS for the question: *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.*

Question No. : 25

1. 'Stat' signaled something measurable, while 'matic' advertised free labour; but 'tron', above all, indicated control.
2. It was a totem of high modernism, the intellectual and cultural mode that decreed no process or phenomenon was too complex to be grasped, managed and optimized.
3. 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.
4. The historian Robert Proctor at Stanford University calls the suffix '-tron', along with '-matic' and '-stat', embodied symbols.
5. To gain the suffix was to acquire a proud and optimistic emblem of the electronic and atomic age.

A) 2 B) C) D)

DIRECTIONS for the question: *The four sentences (labelled 1,2,3 and 4) given in this question, when properly sequenced, from a coherent paragraph. Decide on the proper order for the sentence and key in this sequence of four numbers as your answer.*

Question No. : 26

1. People with dyslexia have difficulty with print-reading, and people with autism spectrum disorder have difficulty with mind-reading.
2. 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.
3. 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.
4. Print-reading, like mind-reading varies across cultures, depends heavily on certain parts of the brain, and is subject to developmental disorders.

A) 2341 B) C) D)

DIRECTIONS for the question: *The four sentences (labelled 1,2,3 and 4) given in this question, when properly sequenced, from a coherent paragraph. Decide on the proper order for the sentence and key in this sequence of four numbers as your answer.*

Question No. : 27

1. Metaphors may map to similar meanings across languages, but their subtle differences can have a profound effect on our understanding of the world.
2. Latin scholars point out carpe diem is a horticultural metaphor that, particularly seen in the 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 more telling ways that we mistranslate metaphors from one language to another, revealing in the process our hidden assumptions about what we really value.

A) 3241 B) C) D)

DIRECTIONS for the question: *Identify the most appropriate summary for the paragraph.*

Question No. : 28

Vance Packard's The Hidden Persuaders alerted the public to the psychoanalytical techniques used by the advertising industry. Its premise was that advertising agencies were using 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 about subliminal advertising. Packard never mentioned the word subliminal, however, and devoted very little space to discussions of "subthreshold" effects. Instead, his views 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.

A) Packard argued that advertising as a 'hidden persuasion' understands the hiddenmotivations of consumers and works at the subliminal level, on the subconscious level of the awareness of the people targeted.
B) 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.
C) Packard argued that advertising as a 'hidden persuasion' works at the supraliminal level, wherein the people targeted are aware of being persuaded, after understanding the hidden motivations of consumers and works.
D) 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

DIRECTIONS for the question: *Identify the most appropriate summary for the paragraph.*

Question No. : 29

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, not limited to the here and now, can pop into our heads for unfathomable 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 symbols is that the mental categories they relate to can be invoked even in the absence of immediate stimuli.

A) Thoughts precede all speech acts and these thoughts pop up in our heads even in the absence of any stimulus.
B) The ability to think about objects not present in our environment precedes the development of human communication.
C) Thoughts are essential to communication and only humans have the ability to think about objects not present in their surroundings.
D) Displaced reference is particular to humans and thoughts pop into our heads for no real reason

DIRECTIONS for the question: *Identify the most appropriate summary for the paragraph.*

Question No. : 30

Physics is a pure science that seeks to understand the behavior of matter without regard to whether it will afford any practical benefit. Engineering is the correlative applied science in which physical theories are put to some specific use, such as building a bridge or a nuclear reactor. Engineers obviously rely heavily on the discoveries of physicists, but an engineer'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 strictest sense are still sometimes very good approximations to the true ones, and often have the added virtue of being much easier to work with. Second, sometimes the true theories apply only under highly idealized conditions which can only be created under controlled experimental situations. The engineer finds that in the real world, theories rejected by physicists yield more accurate predictions than the ones that they accept.

A) Though engineering draws heavily from pure science, it contributes to knowledge, by incorporating the constraints and conditions in the real world.
B) Engineering and physics fundamentally differ on matters like building a bridge or a nuclear reactor
C) The relationship between pure and applied science is strictly linear, with the pure science directing applied science, and never the other way round
D) The unique task of the engineer is to identify, understand, and interpret the design constraints to produce a successful result.

DIRECTIONS for the question: *The four sentences (labelled 1,2,3 and 4) given in this question, when properly sequenced, from a coherent paragraph. Decide on the proper order for the sentence and key in this sequence of four numbers as your answer.*

Question No. : 31

1. If you've seen a little line of text on websites that says something like "customers who bought this also enjoyed that" you have experienced this collaborative filtering firsthand.
2. The problem with these algorithms is that they don't take into account a host of nuances 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 about gardening, recommended just for you! – the algorithm has no way of knowing you hate gardening and only bought the book as a gift.
4. Collaborative filtering is a mathematical algorithm by which correlations and co- occurrences of behaviors are tracked and then used to make recommendations.

A) 4123 B) C) D)

DIRECTIONS for the question: *The four sentences (labelled 1,2,3 and 4) given in this question, when properly sequenced, from a coherent paragraph. Decide on the proper order for the sentence and key in this sequence of four numbers as your answer.*

Question No. : 32

1. We'll all live under mob rule until then, which doesn't help anyone.
2. Perhaps we need to learn to condense the feedback we receive online so that 100 replies carry the same weight as just one.
3. 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.
4. A new norm will arise where it is considered unacceptable to reply with the same point that dozens of others have already.

A) 3241 B) C) D)

DIRECTIONS for the question: *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.*

Question No. : 33

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 right to 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 in the 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.

A) 2 B) C) D)

DIRECTIONS for the question: *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.*

Question No. : 34

1. One argument is that actors that do not fit within a single, well-defined category may suffer an "illegitimacy discount".
2. Others believe that complex identities confuse audiences about an organization's role or purpose.
3. Some organizations have complex and multidimensional identities that span or combine categories, while other organizations possess narrow identities.
4. Identity is one of the most important features of organizations, but there exist opposing views among sociologists about how identity affects organizational performance.
5. Those who think that complex identities are beneficial point to the strategic advantages of ambiguity, and organizations' potential to differentiate themselves from competitors.

A) 1 B) C) D)

Section : DI & Reasoning

DIRECTIONS for the question: *Solve the following problem question and mark the best possible option.*

Question No. : 35

The following table represents addition of two six-digit numbers given in the first and the second rows, while the sum is given in the 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

Which digit does the letter A represent?

A) 1 B) C) D)

Question No. : 36

The following table represents addition of two six-digit numbers given in the first and the second rows, while the sum is given in the 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

Which digit does the letter B represent?

A) 9 B) C) D)

Question No. : 37

The following table represents addition of two six-digit numbers given in the first and the second rows, while the sum is given in the 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

Which among the digits 3, 4, 6 and 7 cannot be represented by the letter D?

A) 7 B) C) D)

Question No. : 38

The following table represents addition of two six-digit numbers given in the first and the second rows, while the sum is given in the 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

Which among the digits 4, 6, 7 and 8 cannot be represented by the letter G?

A) 6 B) C) D)

DIRECTIONS for the question: *Read the information given below and answer the question that follows.*

Question No. : 39

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 any other dancers. The dancers performed their second items in the same sequence of their 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) The items assigned by Ashman were performed consecutively. The number of performances between items assigned by each of the remaining composers was the same.

Which of the following is true?

A) The third performance was composed by Ashman B) The second performance was composed by Dyu.
C) The second performance was composed by Gagan D) The third performance was composed by Dyu

Question No. : 40

Which of the following is FALSE?

A) Queen did not perform in any item composed by Gagan
B) Samragni did not perform in any item composed by Ashman C) Rani did not perform in any item composed by Badal
D) Princess did not perform in any item composed by Dyu

Question No. : 41

The sixth performance was composed by:

A) Gagan B) Badal C) Ashman D) Dyu

Question No. : 42

Which pair of performances were composed by the same composer?

A) The third and the seventh B) The first and the seventh C) The first and the sixth D) The second and the sixth

DIRECTIONS for the question: *Read the information given below and answer the question that follows.*

Question No. : 43

A new game show on TV has 100 boxes numbered 1, 2, . . . , 100 in a row, each containing a mystery prize. The prizes are items of different types, a, b, c, . . . , in decreasing order of value. The most expensive item is of type a, a diamond ring, and there is exactly one of these. You are told that the number of items at least doubles as you move to the next type. 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 c as of type b and so on. There is no particular order in which the prizes are placed in the boxes.

What is the minimum possible number of different types of prizes?

A) 2 B) C) D)

DIRECTIONS for the question: *Read the information given below and answer the question that follows.*

Question No. : 44

A new game show on TV has 100 boxes numbered 1, 2, . . . , 100 in a row, each containing a mystery prize. The prizes are items of different types, a, b, c, . . . , in decreasing order of value. The most expensive item is of type a, a diamond ring, and there is exactly one of these. You are told that the number of items at least doubles as you move to the next type. 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 c as of type b and so on. There is no particular order in which the prizes are placed in the boxes.

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

A) 6 B) C) D)

DIRECTIONS for the question: *Read the information given below and answer the question that follows.*

Question No. : 45

Which of the following is not possible?

A) There are exactly 60 items of type d. B) There are exactly 30 items of type b C) There are exactly 45 items of type c
D) There are exactly 75 items of type e

DIRECTIONS for the question: *Read the information given below and answer the question that follows.*

Question No. : 46

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?

A) 6 B) 4 C) 3 D) 5

DIRECTIONS for the question: *Read the information given below and answer the question that follows.*

Question No. : 47

A supermarket has to place 12 items (coded A to L) in shelves numbered 1 to 16. Five of these items are types of biscuits, three are types of candies and the rest are types 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 shelf between items of the same type and at least one empty shelf between two different types of items. At most two empty shelves can have consecutive 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.

In how many different ways can the items be arranged on the shelves?

A) 4 B) 1 C) 2 D) 8

Question No. : 48

Which of the following items is not a type of biscuit?

A) B B) A C) L D) G

Question No. : 49

Which of the following can represent the numbers of the empty shelves in a possible arrangement?

A) 1,7,11,12 B) 1,2,8,12 C) 1,2,6,12 D) 1,5,6,12

Question No. : 50

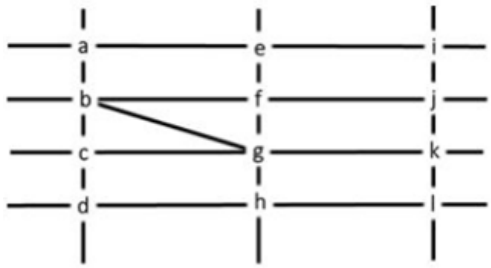
Which of the following statements is necessarily true?

A) There are at least four shelves between items B and C.
B) There are two empty shelves between the biscuits and the candies C) All candies are kept before biscuits.
D) All biscuits are kept before candies.

DIRECTIONS for the question: *Go through the graph and the information given below and answer the question that follows.*

Question No. : 51

The figure below shows the street map for a certain region with the street intersections marked from a through l. A person standing at an intersection can see along straight lines 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 U, V, W, X, 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 a triangle 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.

Who is standing at intersection a?

A) No one B) Y C) V D) W

Question No. : 52

Who can V see?

A) U, W and Z only B) Z only C) U and Z only D) U only

Question No. : 53

What is the minimum number of street segments that X must cross to reach Y?

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

Question No. : 54

Should a new person stand at intersection d, who among the six would she see?

A) U and Z only B) V and X only C) W and X only D) U and W only

DIRECTIONS for the question: *Go through the graph and the information given below and answer the question that follows.*

Question No. : 55

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 first three rounds gave a player one additional chance to shoot in the bonus rounds, Rounds 4 to 6. The possible scores in Rounds 4 to 6 were identical to the first 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 in that round, while a hyphen means that the player participated in that round and the score information is missing.

	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.

What was the highest total score?

A) 25 B) 21 C) 24 D) 23

Question No. : 56

What was Zeneca's total score?

A) 21 B) 22 C) 23 D) 24

Question No. : 57

Which of the following statements is true?

A) Xyla's score was 23 B) Xyla was the highest scorer C) Zeneca was the highest scorer D) Zeneca's score was 23

Question No. : 58

What was Tanzi's score in Round 3?

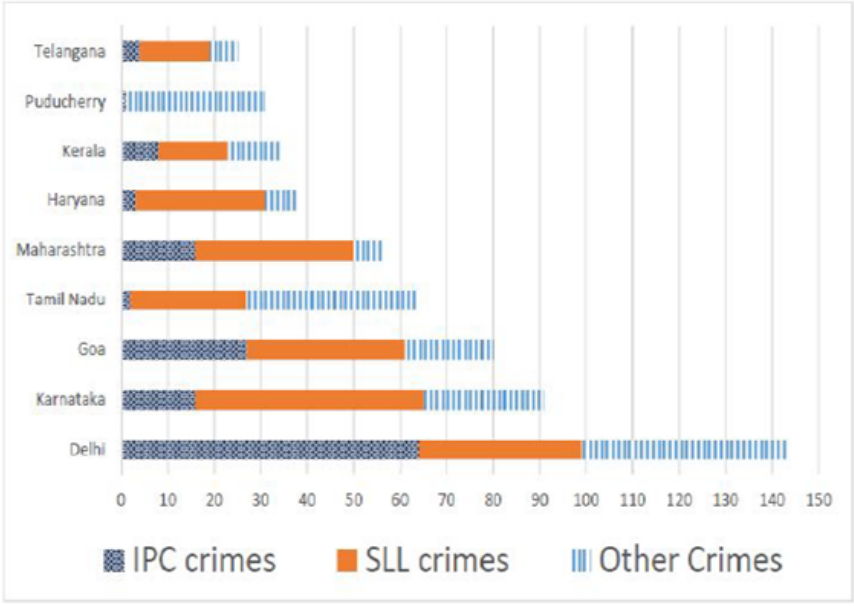
A) 5 B) 4 C) 1 D) 3

DIRECTIONS for the question: *Analyse the graph/s given below and answer the question that follows.*

Question No. : 59

The Ministry of Home Affairs is analysing crimes committed by foreigners in different states and union territories (UT) of India. All cases refer to the ones registered against foreigners in 2016.

The number of cases – classified into three 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.



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/UT is given rank r for a category of crimes if there are (r-1) states/UTs having a larger 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 registered in the same category, then both the states are given rank 4 in that category. Missing ranks in the table are denoted by *.

	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

What is the rank of Kerala in the 'IPC crimes' category? (type in numerical value)

A) 5 B) C) D)

Question No. : 60

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

A) 11:10 B) 19:20 C) 1:9 D) 3:2

Question No. : 61

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

A) both i) and ii) B) only i) C) only ii) D) neither i) , nor ii)

Question No. : 62

What is the sum of the ranks of Delhi in the three categories of crimes? (type in numerical value)

A) 5 B) C) D)

DIRECTIONS for the question: *Analyse the graph/s given below and answer the question that follows.*

Question No. : 63

Five vendors are being considered for a service. The evaluation committee 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 Cos

On which aspect is the median score of the five vendors the least?

A) Quality B) Cost C) Customer Service D) Reliability

Question No. : 64

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

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

Question No. : 65

List of all the vendors who are among the top two scorers on the maximum number of aspects is:

A) Vendor 2 and Vendor 5 B) Vendor 1 and Vendor 5 C) Vendor 1 and Vendor 2 D) Vendor 2, Vendor 3 and Vendor 4

Question No. : 66

List of all the vendors who are among the top three vendors on all six aspects is:

A) Vendor 1 B) None of the Vendors C) Vendor 3 D) Vendor 1 and Vendor 3

Section : Quantitative Ability

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 67

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 in the ratio 2 : 1, earning annual interest at the rates of 4% and 3%, respectively. If the total annual interest income is Rs 76000 then the amount (in Rs lakh) invested in the fixed deposit was (type in box)

A) 9 B) C) D)

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 68

In a race of three horses, the first beat the second by 11 metres and the third by 90 metres. If the second beat the third by 80 metres, what was the length, in metres, of the racecourse? (type in box)

A) 880 B) C) D)

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 69

If $(5.55)^x = (0.555)^y = 1000$, then the value of $\frac{1}{x} - \frac{1}{y}$ is

A) 2/3 B) 3 C) 1 D) 1/3

DIRECTION for the question: *Solve the following question and mark the best possible option.*

Question No. : 70

The income of Amala is 20% more than that of Bimala and 20% less than that of Kamala. If Kamala's income goes down by 4% and Bimala's goes up by 10%, then the percentage by which Kamala's income would exceed Bimala's is nearest to

A) 29 B) 28 C) 31 D) 32

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 71

Consider a function *f* satisfying $f(x + y) = f(x) f(y)$ where x, y are positive integers, and $f(1) = 2$. If $f(a+1) + f(a+2) + \ldots\ldots + f(a+n) = 16 (2^n - 1)$ then a is equal to (type in box)

A) 3 B) C) D)

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 72

For any positive integer n, 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 (type in box)

A) 10 B) C) D)

DIRECTION for the question: *Solve the following question and mark the best possible option.*

Question No. : 73

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 (type in box)

A) 20 B) C) D)

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 74

If $a_1 + a_2 + a_3 + ... + a_n = 3(2^{n+1} - 2)$, for every $n \geq 1$, then a_{11} equals (type in box)

A) 6144 B) C) D)

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 75

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 of time. If the first car travelled for at least 6 hours, then the highest possible value of the percentage by which the speed of the second car could exceed that of the first car is

A) 20 B) 25 C) 30 D) 10

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 76

The number of solution to the equation $|x|(6x^2 + 1) = 5x^2$ is (type in box)

A) 5 B) C) D)

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 77

Let T be the triangle formed by the straight line 3x + 5y - 45 = 0 and the coordinate axes. Let the circumcircle of T have radius of length L, measured in the same unit as the coordinate axes. Then, the integer closest to L is (type in box)

A) 9 B) C) D)

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 78

If the rectangular faces of a brick have their diagonals in the ratio $3 : 2\sqrt{3} : \sqrt{15}$, then the ratio of the length of the shortest edge of the brick to that of its longest edge is:

A) $1 : \sqrt{3}$ B) $\sqrt{3} : 2$ C) $\sqrt{2} : \sqrt{3}$ D) $2 : \sqrt{5}$

***DIRECTIONS for the question** : Solve the following question and mark the best possible option.*

Question No. : 79

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

A) 25 B) 150 C) 100 D) 250

***DIRECTIONS for the question:** Solve the following question and mark the best possible option.*

Question No. : 80

A club has 256 members of whom 144 can play football, 123 can play tennis, and 132 can play cricket. Moreover, 58 members can play both football and tennis, 25 can play both cricket and tennis, while 63 can play both football and cricket. If every member can play at least one game, then the number of members who can play only tennis is

A) 45 B) 43 C) 32 D) 38

***DIRECTIONS for the question:** Solve the following question and mark the best possible option.*

Question No. : 81

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

A) 50 B) 85 C) 58 D) 95

***DIRECTIONS for the question:** Solve the following question and mark the best possible option.*

Question No. : 82

In a circle of radius 11 cm, CD is a diameter and AB is a chord of length 20.5 cm. If AB and CD intersect at a point E inside the circle and CE has length 7 cm, then the difference of the lengths of BE and AE, in cm, is

A) 2.5 B) 3.5 C) 1.5 D) 0.5

***DIRECTIONS for the question:** Solve the following question and mark the best possible option.*

Question No. : 83

Three men and eight machines can finish a job in half the time taken by three machines and eight men to finish the same job. If two machines can finish the job in 13 days, then how many men can finish the job in 13 days? (type in box)

A) 13 B) C) D)

***DIRECTIONS for the question:** Solve the following question and mark the best possible option.*

Question No. : 84

Amala, Bina, and Gouri invest money in the ratio 3 : 4 : 5 in fixed deposits having respective annual interest rates in the ratio 6 : 5 : 4. What is their total interest income (in Rs) after a year, if Bina's interest income exceeds Amala's by Rs 250?

A) 7250 B) 7000 C) 6350 D) 6000

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 85

The product of the distinct roots of $|x^2 - x - 6| = x + 2$ is

A) -24 B) -4 C) -8 D) -16

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 86

The number of the real roots of the equation $2\cos(x(x + 1)) = 2^x + 2^{-x}$ is

A) infinite B) 2 C) 0 D) 1

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 87

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 half litre of the mixture weighs 480 gm, then the percentage of liquid 1 in the mixture, in terms of volume, is

A) 80 B) 75 C) 85 D) 70

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 88

AB 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 PB is 6 cm, and the length of AP is twice that of AQ. Then the length, in cm, of QB is nearest to

A) 8.5 B) 9.3 C) 9.1 D) 7.8

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 89

Corners are cut off from an equilateral triangle T to produce a regular hexagon H. Then, the ratio of the area of H to the area of T is

A) 3 : 4 B) 2 : 3 C) 5 : 6 D) 4 : 5

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 90

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: (type in box)

A) 2 B) C) D)

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 91

Ramesh and Gautam are among 22 students who write an examination. Ramesh scores 82.5. The average score of the 21 students other than Gautam is 62. The average score of all the 22 students is one more than the average score of the 21 students other than Ramesh. The score of Gautam is

A) 48 B) 49 C) 53 D) 51

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 92

If $a_1, a_2 \ldots$ are in A.P., then, $\frac{1}{\sqrt{a_1}+\sqrt{a_2}}+\frac{1}{\sqrt{a_2}+\sqrt{a_3}}+\ldots+\frac{1}{\sqrt{a_n}+\sqrt{a_{n+1}}}$ is equal to

A) $\frac{n-1}{\sqrt{a_1}+\sqrt{a_n}}$ B) $\frac{n}{\sqrt{a_1}-\sqrt{a_{n+1}}}$ C) $\frac{n-1}{\sqrt{a_1}+\sqrt{a_{n-1}}}$ D) $\frac{n}{\sqrt{a_1}+\sqrt{a_{n+1}}}$

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 93

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 finish the task if she works alone at her usual efficiency?

A) 24 B) 12 C) 18 D) 36

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 94

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 Bimal took each mode of transport 1/3 of the total distance. The percentage by which Bimal's travel time exceeds Amal's travel time is nearest to

A) 22 B) 21 C) 19 D) 20

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 95

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 have 7 marks more than the passing score. The percentage score needed for passing the examination is

A) 75 B) 60 C) 80 D) 70

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 96

On selling a pen at 5% loss and a book at 15% gain, Karim gains Rs. 7. If he sells the pen at 5% gain and the book at 10% gain, he gains Rs. 13. What is the cost price of the book in Rupees?

A) 100 B) 80 C) 85 D) 95

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 97

The wheels of bicycles A and B have radii 30 cm and 40 cm, respectively. While traveling a certain 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

A) 16π B) 14π C) 18π D) 12π

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 98

With rectangular axes 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 (type in box)

A) 3920 B) C) D)

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 99

If m and n are integers such that $\left(\sqrt{2}\right)^{19} 3^4 4^2 9^m 8^n = 3^n 16^m \left(\sqrt[4]{64}\right)$ then m is

A) -16 B) -24 C) -20 D) -12

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 100

If the population of a town is p in the beginning of any year then it becomes 3+2p 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

A) $(1003)2^{15} - 3$ B) $(997)2^{14} + 3$ C) $(1003)^{15} + 6$ D) $(997)^{15} - 3$

QNo:- 1 ,Correct Answer:- *B*

Explanation:- *For this, we need to concentrate on Paragraphs 2 and 4 of the passage. In paragraph 2, the author says that Casper and Glossier are exceptions to a dominant trend and in Paragraph 4, the author explains how these companies get pushed into offering variety. Options 1 and 4 are easy to reject as they are not mentioned. Out of options 2 and 3, though both are factually correct according to the passage, 2 is more appropriate because the question stem asks for the OVERALL PURPOSE of the mention of these two companies.*
Hence, the answer should be OPTION 2.

QNo:- 2 ,Correct Answer:- *B*

Explanation:- *Let us examine the options one by one.*
Option 1 - The second line of the passage contradicts this option and hence this option weakens the author's claim.
Option 2 - The author relates to this when he/she mentions that a few companies which don't offer many options have sprung up because of choice anxiety. So, it is possible that those companies do better for a period of time than the companies which give options. However, the author explains that even the companies which don't give options will start to offer options in order to survive. But it is entirely possible that for a period of time the annual sales growth of companies with fewer product options are higher than that of companies which curated their products for target consumers Hence, this does not weaken the author's claim.
Option 3 - According to the author, lifestyle influencers have a positive impact on consumers and the companies that hire them should have higher sales. This option contradicts that claim and hence weakens.
Option 4 - This option contradicts the author's claim mentioned in the last line of the third paragraph and hence weakens.
Hence, the answer should be OPTION 2.

QNo:- 3 ,Correct Answer:- *B*

Explanation:- *A reading of paragraph 3 helps us get to the answer. The author expresses concern for America's lower classes and how with the options expanding, purchasing even basic things has become difficult for them (Last line of the third paragraph). Option 2 aligns the best with this thought process.*
Hence, the answer should be OPTION 2.

QNo:- 4 ,Correct Answer:- *C*

Explanation:- *The author's prediction is that the start-ups offering few product options will eventually have to move towards variety (Last paragraph first line and the further reading of this paragraph elaborates on this idea). The statement adding least depth is likely to be the one which contradicts this idea or does not support it very strongly. Let us examine the options one by one.*
Option 1 - If the start-ups with few product options are no exception to the American consumer market, then their fate is likely to be determined by the trend in the market which favours companies offering variety. So this supports the author's idea fairly strongly.
Option 2 - If the government decides to double the tax-rates for these start-ups, then surviving and making profits becomes even more difficult for these companies and it lends support to the author's argument that these companies will have to move towards variety to meet the expectations of steep growth rate of the investors which can't be achieved by selling one great product.
Option 3 - An exponential surge in their sales enables start-ups to meet their desired profit goals without expanding their product catalogue means that they will be able to the investors' expectations without offering variety and this contradicts the author's prediction. A very strong contender for the right answer.
Option 4 - This option talks about what happens once the companies have already ventured into new products and the author's prediction is that they will venture into new products. So what happens once the companies start offering variety is irrelevant to the question.
Hence, the answer should be OPTION 3.

QNo:- 5 ,Correct Answer:- *B*

Explanation:- *Options 1 & 4 can be inferred from the first few lines of the passage where the author talks about choice anxiety, etc. Option 3 can be inferred from the lines at the end of the first paragraph where the author talks about people gravitating towards lifestyle influencers. Option 2 cannot be inferred.*
Hence, the answer should be OPTION 2.

QNo:- 6 ,Correct Answer:- *A*

Explanation:- *Option 1 - The point here is that the temperature of the Penguins' bodies (but not surface plumage) was higher than the surrounding air which allowed for radiation to take place. The average air temperature mentioned in the passage is 0.32 degrees Fahrenheit. Now, it makes no difference to the findings of the study reported if the temperature of the feet of penguins was 1.76 degrees Fahrenheit (as mentioned in the passage) or 2.76 degrees Fahrenheit as in either case it is higher than the average air temperature and radiation will take place.*
This implies that this option does not negate the findings of the study reported and hence should be the answer.Option 2 - The problem with this option is that if the heat transfer could not take place, then the study would have very different findings as much of the explanation in the study is based on heat transfer through radiation and convection.
Option 3 - This option would mean that the temperature on the plumage was higher than the average air temperature and then heat would flow from plumage to the outside air. This is in direct contradiction with the findings of the study.
Option 4 - If the average air temperature were -10 degrees Fahrenheit, then it would be lower than the temperature on the plumage. Hence, heat would flow from plumage to the outside air which contradicts the report in the study.
Hence, the answer should be OPTION 1.

QNo:- 7 ,Correct Answer:- *B*

Explanation:- *The other three options result in gaining body heat (explained in the passage). Reproduction, however, is going to result in the loss of body heat.*
Hence, the answer should be OPTION 2.

QNo:- 8 ,Correct Answer:- *A*

Explanation:- *The word 'Paradoxical' is defined as 'self-contradictory'. The author here means that though a part of Penguins' bodies (their plumage) is colder than the outside air, it actually helps keep their bodies warmer (which is kind of self-contradictory).*
Option 2 - This statement, though true, is not self-contradictory and hence not paradoxical.
Options 3 & 4 are factually incorrect according to the passage.
Hence, the answer should be OPTION 1.

QNo:- 9 ,Correct Answer:- *B*

Explanation:- *In Paragraph 3, the author is talking about how the outside air (which is slightly warmer than the plumage) comes into contact with the plumage and donates minute amounts of heat back to the penguins, then cycles away at a slightly colder temperature.*
The other options do not relate to the point being discussed in the last line of paragraph 3.
Hence, the answer should be OPTION 2.

QNo:- 10 ,Correct Answer:- *D*

Explanation:- *From the lines 'Just as the effusive floral prints of the radical William Morris now cover genteel sofas, so the revolutionary intentions of many folk historians and revivalists have led 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 music festivals, awards ceremonies and on TV, reissued on countless record labels & 'what the Victorian socialist William Morris called the "anti-scrape", or an anti- capitalist conservationism (not conservatism) that solaced itself with the vision of a pre- industrial golden age , it is clear that these examples lines highlight that folk music has been generally considered revolutionary, parochial, etc but at the same ime it is admired and followed also. This is reflected in option 4.*

QNo:- 11 ,Correct Answer:- *D*

Explanation:- *Electrification of folk music happened later and not the other way round. So this cannot be inferred as there is no concrete evidence for the same. Option 1 can be inferred from last line of the first paragraph.Option 2 can be inferred from third paragraph. Option 3 can be inferred from last paragraph.*

QNo:- 12 ,Correct Answer:- *B*

Explanation:- *From the lines 'Victorian socialist William Morris called the "anti-scrape", or an anti- capitalist conservationism (not conservatism) that solaced itself with the vision of a pre- industrial 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 it or appropriate it for political or cultural ends – has always been contested territory, it is clear that folk music is considered to be associated with past of something nostlagic (the key word is 'fossilised'). This is reflected in option 2. Other options do not reflect the seemingly assocoation of the folk music with the past.*

QNo:- 13 ,Correct Answer:- *A*

Explanation:- *Option 1 is not referring to folk music being plural and diverse, instead it is showing the perception relted to appeal of this genre. Other option show the causes for plurality and diversity within the British folk tradition.*

QNo:- 14 ,Correct Answer:- *B*

Explanation:- *From the lines 'so the revolutionary intentions of many folk historians and revivalists have led 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 music festivals, awards ceremonies and on TV, reissued on countless record labels. Folk is a sonic "shabby chic", containing elements of the uncanny and eerie, as well as an antique veneer, a whiff of Britain's heathen dark ages. The very obscurity and anonymity of folk music's origins open up space for rampant imaginative fancies, the author is least likely to agree with this genre keeping homogeneity with each change. Hence answer is option 2.*

QNo:- 15 ,Correct Answer:- *A*

Explanation:- *From the lines '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., it is clear that option 1 is closest to author's understanding of topoohilia. 'Topography' is features and hence option 2 rejected. Option 3 is about language and not land/area, therefore rejected. Option 4 is exactly opposite of what has been asked and hence rejected.*

QNo:- 16 ,Correct Answer:- *C*

Explanation:- *From the lines 'Residents of upscale residential developments have disclosed how important it is to maintain their 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 of fear cast a dark shadow over a place that makes one feel a sense of dread or anxiety—or topophobia, it is claer that answer is option 3.*

QNo:- 17 ,Correct Answer:- *C*

Explanation:- *From the lines 'Topophilia—and its very close conceptual twin, sense of place—is an experience that, however elusive, has inspired recent architects and planners. Most notably, new urbanism 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, but their intensity rarely is long- lasting. 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', it is clear that this experience is very subjective and personal and hence cannot be quantified. This is clearly reflected in option 3.*

QNo:- 18 ,Correct Answer:- *D*

Explanation:- *From the line '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 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 have disclosed how important it is to maintain their community's distinct identity, often by casting themselves in a superior social position and by reinforcing class and racial differences.', and this is reflected in option 4.*

QNo:- 19 ,Correct Answer:- *D*

Explanation:- *From the lines 'Patriotism, literally meaning the love of one's terra patria or homeland, has long been cultivated by governing elites for a range of nationalist projects, including war preparation and ethnic cleansing and the lines 'And just as a beloved landscape is suddenly revealed, so too may landscapes of fear cast a dark shadow over a place that makes one feel a sense of dread or anxiety—or topophobia', it is clear that author will not contradict option 4 and hence is the answer option.*

QNo:- 20 ,Correct Answer:- *C*

Explanation:- *The inversion being referred to is that instead of the idea that the story of Aladdin might have been inspired by the plots of French fairy tales that came out around the same time, or that the story was invented in that 18th century period as a byproduct of French Orientalism, a fascination with stereotypical exotic Middle Eastern luxuries that was prevalent then, now the new idea was that Diyab might have based it on his own life — the experiences of a Middle Eastern man encountering the French and not vice-versa.*
We need to show which option "invalidates" this new idea i.e. which option says that the story of Aladdin was not based on Diyab's life. Let us examine all the options one by one.
Option 1 - If Galland acknowledged in the published translations of Arabian Nights that he heard the story of Aladdin from Diyab, then it means that the story is based on Diyab's life and hence the inversion does not get invalidated. Hence, this should not be the answer.
Option 2 - If the French fairy tales of the eighteenth century did not have rags-to-riches plot lines like that of the tale of Aladdin, then it means that the tale of Aladdin could not have been based on the French fairy tales, meaning it could then have been based on Diyab's life rather. The inversion does not get invalidated. Hence, this should not be the answer.
Option 3 - If the description of opulence in Hanna Diyab's and Antoine Galland's narratives bore no resemblance to each other, then Galland was not influenced by Diyab's narrative while writing his own, meaning that the story was not based on Diyab's life. This is exactly what we need to invalidate the inversion. This option is a very strong contender for the correct answer.
Option 4 - Change of the name of the city does not matter as the story could still be based on Diyab's own life with a change in the name of the city. The inversion does not get invalidated. Hence, this should not be the answer.
Hence, the answer should be OPTION 3.

QNo:- 21 ,Correct Answer:- *A*

Explanation:- *According to the author, Galland heard the tale of Aladdin from Diyab (Last line of Paragraph 1). An understanding of the first and the second paragraphs informs us that the author is of the opinion that Galland included the tale told by Diyab in Arabian Nights and it is highly likely that Diyab might have based the tale on his own life experiences. So, this leads to OPTION 1 BEING THE ANSWER.*
Let us now examine the problems with the other options.
Option 2 - Neither Galland nor Diyab found the tale of Aladdin in an incomplete medieval manuscript. So this option is incorrect.
Option 3 - Galland did not derive the story from Diyab's travelogue
Option 4 - The story of Aladdin does not have its origins in an undiscovered, incomplete manuscript of a medieval Arabic collection of stories. So this option is factually incorrect.

QNo:- 22 ,Correct Answer:- *A*

Explanation:- *Towards the end of the passage, the author talks about Diyab's understanding of Paris' culture. He also talks about the Ups and Downs faced by Diyab and his humble beginnings. The author also mentions that Diyab describes the vast wealth of Versailles. These three features also resonate with the character of Aladdin. Hence, Options 2, 3 and 4 will be incorrect.*
From option 1, we only get to know that Galland gets the story from description of Diyab. We can't conclude from this option that Aladdin is based on Diyab.
Hence, the answer should be OPTION 1.

QNo:- 23 ,Correct Answer:- *C*

Explanation:- *In the first two lines of the last paragraph, the author says that Aladdin is relevant even today because of its travel experiences. Option 3 talks exactly about the same.*
Hence, the answer should be OPTION 3.

QNo:- 24 ,Correct Answer:- *A*

Explanation:- *In the third paragraph, the author says that many scholars thought the story of Aladdin might have been inspired from French fairy tales. The author tries to disprove this by saying various instances from Diyab's life and how it would have inspired him to base Aladdin upon him. Options 2, 3 and 4 support the author's claims whereas option a goes against the author's claims.*
Hence, the answer should be OPTION 1.

QNo:- 25 ,Correct Answer:- *2*

Explanation:- *After reading all the sentences/context, it is clearly understood that discussion moves round symbols and their interptetation modern context. Also some sort of analogy has also been drawn with historical context. In the rearrangement, the opening sentence has to be 4 , as it intruduces Robert Proctor and his idea ogf the symbols. After this 3 will come as it talks futher about these symbols by drawing analogy symbols on sheilds of ancient knights. After this 1 will come, as it highlights the embeded meaning of the suffixes.After this 5 will come as it tells about the significance of 'tron' in having control. So the order is 4315. 2 introduces the intellectual and cultral angles to the discusion of these symbols, which is off tangent and hence odd one out.*

QNo:- 26 ,Correct Answer:- *2341*

Explanation:- *After reading all the sentences, it is understood that context moves round 'mind reading' and hence the opening sentence is 2. After this 3 will come as the key link is 'mid reading' . The examples 'developmental disorders' in 4 have been given in 1. Hence 41 is a mandatory pair. The final rearrangent of the sentences will be 2341*

QNo:- 27 ,Correct Answer:- *3241*

Explanation:- *After reading all the sentences, it is understood that context starts from very specific case and then conclusion is drawn. The context moves round the meaning and interptetation of phrase 'carpe diem' in different languages and its profound impact on our understanding of the world around us. The introductory sentence will be 3 and the hint for it is 'often' i.e. generally the meaning of the phrase is 'seize the day'. After this 2 will come as it higlights the meaning of the same phrase in Latin Language. 4 is the summing up sentences 2 & 3. Both the interptetations (of the phrase) are same but have subtle difference as in the way we value the world around us. Hence the final seqiuence is 3241.*

QNo:- 28 ,Correct Answer:- *B*

Explanation:- *The keywords are 'hidden persuaders' , hidden consumer motivations' , 'supraliminal level' & consumers are not even aware of their thought being manipulated by advertising companies. Option 1 and option 4 is rejected as Vance did not mention 'subliminal' level and this option says that people are aware of these manipulations. Option 3 is rejected as 'people are not aware' of these manipulations. Hence the passage is aptly summarised by option 2.*

QNo:- 29 ,Correct Answer:- *B*

Explanation:- *The key points are 'absent things, known as displaced reference', 'absence of any obvious stimuli' & 'Thought precedes meaningful referential communication. All these points have aptly captured by option 2. Option 1 is rejected as it is not about 'all speech' , instead it is about 'meaningful communication. No where it is mentioned that 'only humans' have this capacity, so option 3 is rejected. Option 4 is rejected as it is nowhere mentioned that 'displaced reference' is particular to humans.*

QNo:- 30 ,Correct Answer:- *A*

Explanation:- *The context is comparison between pure science and engineering. The key lines are 'without regard to whether it will afford any practical benefit', 'correlative applied science in which physical theories are put to some specific use,'ut an engineer's knowledge of the world is not the same as the physicist's knowledge' , & sometimes the true theories apply only under highly idealized conditions which can only be created under controlled experimental situations'. All these key points aptly summarized by option 1.*

QNo:- 31 ,Correct Answer:- *4123*

Explanation:- *After reading all the sentence it is easy to figure out that opening sentence is 4, as it introduces the term 'Collaborative filtering'. After this 1 will come as it is an exmaple of 'Collaborative filtering'. After this 2 will come as 'these algorithims' referes to 'results' shown is 1. The 'problem ' in 2 is exeeplified in 3. Hence 4123*

QNo:- 32 ,Correct Answer:- *3241*

Explanation:- *The context moves round 'learning how to handle online criticism' and if it doesnot happen 'what this lead to'. The opening sentence is 3. After this 2 will come as it tells one of the mature ways to accept/ handle criticism. 1 will happen if 4 does not come into the picture. Hence the final sequece of the sentences 3241*

QNo:- 33 ,Correct Answer:- *2*

Explanation:- *The context moves around the rights of hearing impaired or some preconcieved notions about hearing impaired. The opener in this case is 5. After this 3 will come as it shows the result of 5. 'this prejudice' refers to the 'denied rights' in 3. 1 tell further about Pedro Ponce de León'. So the order of these four ot of five sentences is '5341'. Hence the odd one out is 2 as it talks a little off tangent about the same i.e 'deaf are incapable of speech'.*

QNo:- 34 ,Correct Answer:- *1*

Explanation:- *After reading all the sentences it can be deduced that context is about 'Identity is one of the most important features of organizations' and its differing views. Afere this 3 will come as it further tells types of identites'. 5 & 2 form a mandatory pair. So the order of the sentences is 4352. 1 is odd one as it takes the discussion to altogether diffetrent tangent.*

QNo:- 35 ,Correct Answer:- *1*

Explanation:- *Starting with F, F+F gives us F. only possible F can be 0 here.*

	B	H	A	A	G	0
	A	H	J	0	K	0
A	A	0	G	C	A	0

In column 5, A+0 gives us C. This is only possible if 1 is carried forward from column 5. This have 2 interpretations, 1) G+K is more than 10, 2) C is one more than A.
Using 2nd and changing C's into A+1.
In column 3, H+H is equal 0. This can be done if H is 5 or 0. As F is 0, H can be 5 only.
In column 2, B+A is also A. This is possible if B is 0 but F is already 0. Further B can also be 9 for which 1 can be carried forward from column 3.

	9	5	A	A	G	0
	A	5	J	0	K	0
A	A	0	G	A+1	A	0

As only 1 can be carried forward, A can only be 1.

	9	5	1	1	G	0
	1	5	J	0	K	0
1	1	0	G	2	1	0

In column 6, G+K ends up with 1, so G and K can be 6+5 or 7+4 or 8+3 or 9+2. But as 9 and 5 are already done, G and K can be 7/4 or 8/3 only.
In column 4, 1+J is equal to G without any carried forward. Hence, J = G-1. Remaining values for D,E,G,J,K are 3,4,6,7,8. As J=G-1, G can be 4, 7 or 8. Hence, K can be 7, 4 or 3. J can be 3, 6 or 7.

QNo:- 36 ,Correct Answer:- *9*

Explanation:- *Starting with F, F+F gives us F. only possible F can be 0 here.*

	B	H	A	A	G	0
	A	H	J	0	K	0
A	A	0	G	C	A	0

In column 5, A+0 gives us C. This is only possible if 1 is carried forward from column 5. This have 2 interpretations, 1) G+K is more than 10, 2) C is one more than A.
Using 2nd and changing C's into A+1.
In column 3, H+H is equal 0. This can be done if H is 5 or 0. As F is 0, H can be 5 only.
In column 2, B+A is also A. This is possible if B is 0 but F is already 0. Further B can also be 9 for which 1 can be carried forward from column 3.

	9	5	A	A	G	0
	A	5	J	0	K	0
A	A	0	G	A+1	A	0

As only 1 can be carried forward, A can only be 1.

	9	5	1	1	G	0
	1	5	J	0	K	0
1	1	0	G	2	1	0

In column 6, G+K ends up with 1, so G and K can be 6+5 or 7+4 or 8+3 or 9+2. But as 9 and 5 are already done, G and K can be 7/4 or 8/3 only.
In column 4, 1+J is equal to G without any carried forward. Hence, J = G-1. Remaining values for D,E,G,J,K are 3,4,6,7,8. As J=G-1, G can be 4, 7 or 8. Hence, K can be 7, 4 or 3. J can be 3, 6 or 7.

QNo:- 37 ,Correct Answer:- *7*

Explanation:- *Starting with F, F+F gives us F. only possible F can be 0 here.*

	B	H	A	A	G	0
	A	H	J	0	K	0
A	A	0	G	C	A	0

In column 5, A+0 gives us C. This is only possible if 1 is carried forward from column 5. This have 2 interpretations, 1) G+K is more than 10, 2) C is one more than A.
Using 2nd and changing C's into A+1.
In column 3, H+H is equal 0. This can be done if H is 5 or 0. As F is 0, H can be 5 only.
In column 2, B+A is also A. This is possible if B is 0 but F is already 0. Further B can also be 9 for which 1 can be carried forward from column 3.

	9	5	A	A	G	0
	A	5	J	0	K	0
A	A	0	G	A+1	A	0

As only 1 can be carried forward, A can only be 1.

	9	5	1	1	G	0
	1	5	J	0	K	0
1	1	0	G	2	1	0

In column 6, G+K ends up with 1, so G and K can be 6+5 or 7+4 or 8+3 or 9+2. But as 9 and 5 are already done, G and K can be 7/4 or 8/3 only.
In column 4, 1+J is equal to G without any carried forward. Hence, J = G-1. Remaining values for D,E,G,J,K are 3,4,6,7,8. As J=G-1, G can be 4, 7 or 8. Hence, K can be 7, 4 or 3. J can be 3, 6 or 7.

QNo:- 38 ,Correct Answer:- *6*

Explanation:- *Starting with F, F+F gives us F. only possible F can be 0 here.*

	B	H	A	A	G	0
	A	H	J	0	K	0
A	A	0	G	C	A	0

In column 5, A+0 gives us C. This is only possible if 1 is carried forward from column 5. This have 2 interpretations, 1) G+K is more than 10, 2) C is one more than A.
Using 2nd and changing C's into A+1.
In column 3, H+H is equal 0. This can be done if H is 5 or 0. As F is 0, H can be 5 only.
In column 2, B+A is also A. This is possible if B is 0 but F is already 0. Further B can also be 9 for which 1 can be carried forward from column 3.

	9	5	A	A	G	0
	A	5	J	0	K	0
A	A	0	G	A+1	A	0

As only 1 can be carried forward, A can only be 1.

	9	5	1	1	G	0
	1	5	J	0	K	0
1	1	0	G	2	1	0

In column 6, G+K ends up with 1, so G and K can be 6+5 or 7+4 or 8+3 or 9+2. But as 9 and 5 are already done, G and K can be 7/4 or 8/3 only.
In column 4, 1+J is equal to G without any carried forward. Hence, J = G-1. Remaining values for D,E,G,J,K are 3,4,6,7,8. As J=G-1, G can be 4, 7 or 8. Hence, K can be 7, 4 or 3. J can be 3, 6 or 7.

QNo:- 39 ,Correct Answer:- *B*

Explanation:- *We will make a table with composers on the vertical axis and dancers on the horizontal axis.*
Keep in mind that - Composers can assign 1st, 2nd, 3rd and 4th position in first round and remaining 5th to 8th position in second round.

		Dancers				Extra Notes (if any)
		Princess	Queen	Rani	Samragni	
Composers	Ashman					
	Badal					
	Gagan					
	Dyu					

From condition 3, the first performer was by Princess and this item was assigned by Badal. So we assign 1 in that position.
Similarly from condition 4, The last performance was by Rani; this item was assigned by Gagan. So we assign 8 in that position.

		Dancers				Extra Notes (if any)
		Princess	Queen	Rani	Samragni	
Composers	Ashman					
	Badal	1				
	Gagan			8		

	Dyu	

From condition 1, Composer who assigned to Princess did not assigned any item to Queen.
Similarly, from condition 2, Composer who assigned to Rani did not assigned any item to Samragni.

		Dancers				Extra Notes (if any)
		Princess	Queen	Rani	Samragni	
Composers	Ashman					
	Badal	1	*			
	Gagan			8	*	
	Dyu					

It is given in question that the dancers performed their second items in the same sequence of their performance of their first items. This means that if someone performed at 1st position, he would again perform at 5th Similarly, someone who performs at 3rd position would perform at 7th position.
Thus princess has performed at 1st position so she would again perform at 5th. Similarly, Rani has performed at 8th position, so she would perform at 4th position.

		Dancers				Extra Notes (if any)
		Princess	Queen	Rani	Samragni	
Composers	Ashman					
	Badal	1	*			
	Gagan			8	*	
	Dyu					
Extra Notes (if any)		5th position		4th position		

From condition 5, we get that items assigned by Ashman were performed consecutively. This means that his items were 4 & 5. (when each composer has given the dance item to dancers one then only the composers would be able to give their second list of dances.) (Consecutive items assigned can only be 4 and 5th position)

		Dancers				Extra Notes (if any)
		Princess	Queen	Rani	Samragni	
Composers	Ashman	5		4		4th& 5th position
	Badal	1	*			
	Gagan			8	*	
	Dyu					
Extra Notes (if any)		5th position		4th position		

Let us see what different options are available to different composers. E.g. Badal has given 1st performance to princess, so he can assign 5,6,7,8 position in second round. Now 5th and 8th position are already taken by other composers, thus he is left with assigning 6th and 7th position

		Dancers				Extra Notes (if any)
		Princess	Queen	Rani	Samragni	
Composers	Ashman	5	*	4	*	
	Badal	1	*	*		6th or 7th position
	Gagan	*		8	*	2nd or 3rd position
	Dyu	*		*		2nd or 3rd position
Extra Notes (if any)						

From condition 5, we also get that the number of performances between items assigned by each of the remaining composers was the same.
Badal can assign 6th or 7th position. Check which one is true.
If Badal assign 6th position, then as per condition 5, difference between both 1st and 6th position is 5 and that should be difference with rest all composers except Ashman. We will see if that is possible ofr other composers. Dyu will be left with 2nd and 7th position and difference is 5. Gagan is left will 3rdpostion. Difference 3rd and 8th is also 5. Thus case is true

		Dancers				Extra Notes (if any)
		Princess	Queen	Rani	Samragni	
Composers	Ashman	5	*	4	*	
	Badal	1	*	*	6	
	Gagan	*	3	8	*	
	Dyu	*	7	*	2	
Extra Notes (if any)						

This is the final order as assigned by different composers

The second performance was composed by Dyu

QNo:- 40 ,Correct Answer:- *A*

Explanation:- *We will make a table with composers on the vertical axis and dancers on the horizontal axis.*
Keep in mind that - Composers can assign 1st, 2nd, 3rd and 4th position in first round and remaining 5th to 8th position in second round.

		Dancers				Extra Notes (if any)
		Princess	Queen	Rani	Samragni	
Composers	Ashman					
	Badal					
	Gagan					
	Dyu					

From condition 3, the first performer was by Princess and this item was assigned by Badal. So we assign 1 in that position.
Similarly from condition 4, The last performance was by Rani; this item was assigned by Gagan. So we assign 8 in that position.

		Dancers				Extra Notes (if any)
		Princess	Queen	Rani	Samragni	
Composers	Ashman					
	Badal	1				
	Gagan			8		
	Dyu					

From condition 1, Composer who assigned to Princess did not assigned any item to Queen.
Similarly, from condition 2, Composer who assigned to Rani did not assigned any item to Samragni.

		Dancers				Extra Notes (if any)
		Princess	Queen	Rani	Samragni	
Composers	Ashman					
	Badal	1	*			
	Gagan			8	*	

It is given in question that the dancers performed their second items in the same sequence of their performance of their first items. This means that if someone performed at 1st position, he would again perform at 5th Similarly, someone who performs at 3rd position would perform at 7th position.

Thus princess has performed at 1st position so she would again perform at 5th. Similarly, Rani has performed at 8th position, so she would perform at 4th position.

		Dancers				Extra Notes (if any)
		Princess	Queen	Rani	Samragni	
Composers	Ashman					
	Badal	1	*			
	Gagan			8	*	
	Dyu					
Extra Notes (if any)		5th position		4th position		

From condition 5, we get that items assigned by Ashman were performed consecutively. This means that his items were 4 & 5. (when each composer has given the dance item to dancers one then only the composers would be able to give their second list of dances.) (Consecutive items assigned can only be 4 and 5th position)

		Dancers				Extra Notes (if any)
		Princess	Queen	Rani	Samragni	
Composers	Ashman	5		4		4th& 5th position
	Badal	1	*			
	Gagan			8	*	
	Dyu					
Extra Notes (if any)		5th position		4th position		

Let us see what different options are available to different composers. E.g. Badal has given 1st performance to princess, so he can assign 5,6,7,8 position in second round. Now 5th and 8th position are already taken by other composers, thus he is left with assigning 6th and 7th position

		Dancers				Extra Notes (if any)
		Princess	Queen	Rani	Samragni	
Composers	Ashman	5	*	4	*	
	Badal	1	*	*		6th or 7th position
	Gagan	*		8	*	2nd or 3rd position
	Dyu	*		*		2nd or 3rd position
Extra Notes (if any)						

From condition 5, we also get that the number of performances between items assigned by each of the remaining composers was the same.

Badal can assign 6th or 7th position. Check which one is true.

If Badal assign 6th position, then as per condition 5, difference between both 1st and 6th position is 5 and that should be difference with rest all composers except Ashman. We will see if that is possible ofr other composers. Dyu will be left with 2nd and 7th position and difference is 5. Gagan is left will 3rdpostion. Difference 3rd and 8th is also 5. Thus case is true

		Dancers				Extra Notes (if any)
		Princess	Queen	Rani	Samragni	
Composers	Ashman	5	*	4	*	
	Badal	1	*	*	6	
	Gagan	*	3	8	*	

Extra Notes (if any)
Dyu * 7 * 2

This is the final order as assigned by different composers

Queen did not perform in any item composed by Green

QNo:- 41 ,Correct Answer:- *B*

Explanation:- *We will make a table with composers on the vertical axis and dancers on the horizontal axis.*
Keep in mind that - Composers can assign 1st, 2nd, 3rd and 4th position in first round and remaining 5th to 8th position in second round.

		Dancers				Extra Notes (if any)
		Princess	Queen	Rani	Samragni	
Composers	Ashman					
	Badal					
	Gagan					
	Dyu					

From condition 3, the first performer was by Princess and this item was assigned by Badal. So we assign 1 in that position.
Similarly from condition 4, The last performance was by Rani; this item was assigned by Gagan. So we assign 8 in that position.

		Dancers				Extra Notes (if any)
		Princess	Queen	Rani	Samragni	
Composers	Ashman					
	Badal	1				
	Gagan			8		
	Dyu					

From condition 1, Composer who assigned to Princess did not assigned any item to Queen.
Similarly, from condition 2, Composer who assigned to Rani did not assigned any item to Samragni.

		Dancers				Extra Notes (if any)
		Princess	Queen	Rani	Samragni	
Composers	Ashman					
	Badal	1	*			
	Gagan			8	*	
	Dyu					

It is given in question that the dancers performed their second items in the same sequence of their performance of their first items.
This means that if someone performed at 1st position, he would again perform at 5th Similarly, someone who performs at 3rd position would perform at 7th position.
Thus princess has performed at 1st position so she would again perform at 5th. Similarly, Rani has performed at 8th position, so she would perform at 4th position.

		Dancers				Extra Notes (if any)
		Princess	Queen	Rani	Samragni	
Composers	Ashman					
	Badal	1	*			
	Gagan			8	*	

	Dyu					
Extra Notes (if any)		5th position		4th position		

From condition 5, we get that items assigned by Ashman were performed consecutively. This means that his items were 4 & 5. (when each composer has given the dance item to dancers one then only the composers would be able to give their second list of dances.) (Consecutive items assigned can only be 4 and 5th position)

		Dancers				Extra Notes (if any)
		Princess	Queen	Rani	Samragni	
Composers	Ashman	5		4		4th& 5th position
	Badal	1	*			
	Gagan			8	*	
	Dyu					
Extra Notes (if any)		5th position		4th position		

Let us see what different options are available to different composers. E.g. Badal has given 1st performance to princess, so he can assign 5,6,7,8 position in second round. Now 5th and 8th position are already taken by other composers, thus he is left with assigning 6th and 7th position

		Dancers				Extra Notes (if any)
		Princess	Queen	Rani	Samragni	
Composers	Ashman	5	*	4	*	
	Badal	1	*	*		6th or 7th position
	Gagan	*		8	*	2nd or 3rd position
	Dyu	*		*		2nd or 3rd position
Extra Notes (if any)						

From condition 5, we also get that the number of performances between items assigned by each of the remaining composers was the same.
Badal can assign 6th or 7th position. Check which one is true.
If Badal assign 6th position, then as per condition 5, difference between both 1st and 6th position is 5 and that should be difference with rest all composers except Ashman. We will see if that is possible ofr other composers. Dyu will be left with 2nd and 7th position and difference is 5. Gagan is left will 3rdpostion. Difference 3rd and 8th is also 5. Thus case is true

		Dancers				Extra Notes (if any)
		Princess	Queen	Rani	Samragni	
Composers	Ashman	5	*	4	*	
	Badal	1	*	*	6	
	Gagan	*	3	8	*	
	Dyu	*	7	*	2	
Extra Notes (if any)						

This is the final order as assigned by different composers

Badal

***QNo:- 42 ,Correct Answer:-** C*

***Explanation:-** We will make a table with composers on the vertical axis and dancers on the horizontal axis.*
Keep in mind that - Composers can assign 1st, 2nd, 3rd and 4th position in first round and remaining 5th to 8th position in second

round.

		Dancers				Extra Notes (if any)
		Princess	Queen	Rani	Samragni	
Composers	Ashman					
	Badal					
	Gagan					
	Dyu					

From condition 3, the first performer was by Princess and this item was assigned by Badal. So we assign 1 in that position.
Similarly from condition 4, The last performance was by Rani; this item was assigned by Gagan. So we assign 8 in that position.

		Dancers				Extra Notes (if any)
		Princess	Queen	Rani	Samragni	
Composers	Ashman					
	Badal	1				
	Gagan			8		
	Dyu					

From condition 1, Composer who assigned to Princess did not assigned any item to Queen.
Similarly, from condition 2, Composer who assigned to Rani did not assigned any item to Samragni.

		Dancers				Extra Notes (if any)
		Princess	Queen	Rani	Samragni	
Composers	Ashman					
	Badal	1	*			
	Gagan			8	*	
	Dyu					

It is given in question that the dancers performed their second items in the same sequence of their performance of their first items. This means that if someone performed at 1st position, he would again perform at 5th Similarly, someone who performs at 3rd position would perform at 7th position.
Thus princess has performed at 1st position so she would again perform at 5th. Similarly, Rani has performed at 8th position, so she would perform at 4th position.

		Dancers				Extra Notes (if any)
		Princess	Queen	Rani	Samragni	
Composers	Ashman					
	Badal	1	*			
	Gagan			8	*	
	Dyu					
Extra Notes (if any)		5th position		4th position		

From condition 5, we get that items assigned by Ashman were performed consecutively. This means that his items were 4 & 5. (when each composer has given the dance item to dancers one then only the composers would be able to give their second list of dances.) (Consecutive items assigned can only be 4 and 5th position)

		Dancers				Extra Notes (if any)
		Princess	Queen	Rani	Samragni	
Composers	Ashman	5		4		4th& 5th position

	Badal	1	*	
	Gagan		8	*
	Dyu			
Extra Notes (if any)		5th position	4th position	

Let us see what different options are available to different composers. E.g. Badal has given 1st performance to princess, so he can assign 5,6,7,8 position in second round. Now 5th and 8th position are already taken by other composers, thus he is left with assigning 6th and 7th position

		Dancers				Extra Notes (if any)
		Princess	Queen	Rani	Samragni	
Composers	Ashman	5	*	4	*	
	Badal	1	*	*		6th or 7th position
	Gagan	*		8	*	2nd or 3rd position
	Dyu	*		*		2nd or 3rd position
Extra Notes (if any)						

From condition 5, we also get that the number of performances between items assigned by each of the remaining composers was the same.
Badal can assign 6th or 7th position. Check which one is true.
If Badal assign 6th position, then as per condition 5, difference between both 1st and 6th position is 5 and that should be difference with rest all composers except Ashman. We will see if that is possible ofr other composers. Dyu will be left with 2nd and 7th position and difference is 5. Gagan is left will 3rdpostion. Difference 3rd and 8th is also 5. Thus case is true

		Dancers				Extra Notes (if any)
		Princess	Queen	Rani	Samragni	
Composers	Ashman	5	*	4	*	
	Badal	1	*	*	6	
	Gagan	*	3	8	*	
	Dyu	*	7	*	2	
Extra Notes (if any)						

This is the final order as assigned by different composers

The first and the six

***QNo:- 43 ,Correct Answer:-** 2*

***Explanation:-** The number of items atleast doubles and there are total 100 boxes each containing an item. So minimum types can be 2 as 1st prize having 1 item of type A and 2nd having 99 items of type B.*

***QNo:- 44 ,Correct Answer:-** 6*

***Explanation:-** Similarly to last one, 1 item of type A then 2 of type B then 4 of type C then 8 of type D then 16 of type E then 32 of type F will sum upto 63 items. There cannot be type G because that will cross 100 item barrier. Hence 6.*

QNo:- 45 ,Correct Answer:- *C*

Explanation:- *There is 1 item of type A.*
If there are exactly 30 items of type B then there will be 60 or more type C. If 69 type C, then This is possible.
If there are exactly 45 type C then there must be 2 to 22 type B only summing upto 48 to 68 items. Now Type D must have at least 90 (double of 45) items but it is ***not possible.***
Exactly 60 type D is possible if there is 1 type A, 9 type B and 30 type C.
75 of type E is also possible.
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.

QNo:- 46 ,Correct Answer:- *D*

Explanation:- *Now as per the additional information given in the question, there are a total of 75 boxes in which the same item is given (one in box number 45 and 31 items in 1 - 44 boxes and 43 items in 46 - 100 boxes). Now the remaining 25 items has to be maximized in terms of variety. There is 1 item of type A, so let there be 2 items of type B, 4 items of type C, 8 items of type D. Now after that if try to have 32 items of type E, the total items become more than 100. Thus there can be only 4 more types of items other than the one, which has been used in box number 45. So the total different types of items at the most can be 5.*

QNo:- 47 ,Correct Answer:- *D*

Explanation:-

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

We have to arrange 3 types of item (B, C and S) (total 12 items) in 16 shelves space. We can have 1 or 2 empty selves (E) between 2 items.
It is known that K is on 16th shelves so we put that on 16th (from condition 4)
(From condition 4) It is given that D, E, F will be placed after biscuits and cookies so they will be in last item group. So we will put D, E, F in last shelves in same order and K will be last in that group.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
												D	E	F	K
												D	E	F	K

(from condition 6) there should be 2 empty shelve before C. We also know that C is candy and there are 3 candies
We can arrange them in 2 different ways.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
empty	empty				empty						empty	D	E	F	K
empty						empty	empty	C			empty	D	E	F	K

(from condition 7) There should be 1 empty shelve before L

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
empty	empty	C			empty	L					empty	D	E	F	K
empty	L					empty	empty	C			empty	D	E	F	K

Now (from condition 2), I and J will be placed after A and B. (A....B....I/J....)
(From condition 5) L and J are items of the same type
Mixing above both conditions, we get that I, J, L are of same type and they must be biscuits as they cannot be candies (C is already a candy and they can be only 3 candies in total).
(From Condition 5) H is an item of a different type than L, J. Thus H will be in cookies group.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
empty	empty	C	(H/_)	(_/H)	empty	L					empty	D	E	F	K
empty	L					empty	empty	C	(H/_)	(_/H)	empty	D	E	F	K

(From condition 1) A and B are consecutive thus they lie in same group. They cannot be cookies are there is only 1 space left thus it will be in biscuit. (Biscuit will be A, B, I, J, L) and then G will be a cookies.
We know that AB are consecutive and I and J after them

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
empty	empty	C	(H/G)	(G/H)	empty	L	A	B	(I/J)	(J/I)	empty	D	E	F	K
empty	L	A	B	(I/J)	(J/I)	empty	empty	C	(H/G)	(G/H)	empty	D	E	F	K

QNo:- 48 ,Correct Answer:- *D*

Explanation:-

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

We have to arrange 3 types of item (B, C and S) (total 12 items) in 16 shelves space. We can have 1 or 2 empty selves (E) between 2 items.
It is known that K is on 16th shelves so we put that on 16th (from condition 4)
(From condition 4) It is given that D, E, F will be placed after biscuits and cookies so they will be in last item group. So we will put D, E, F in last shelves in same order and K will be last in that group.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
												D	E	F	K
												D	E	F	K

(from condition 6) there should be 2 empty shelve before C. We also know that C is candy and there are 3 candies
We can arrange them in 2 different ways.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
empty	empty				empty						empty	D	E	F	K
empty						empty	empty	C			empty	D	E	F	K

(from condition 7) There should be 1 empty shelve before L

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
empty	empty	C			empty	L					empty	D	E	F	K
empty	L					empty	empty	C			empty	D	E	F	K

Now (from condition 2), I and J will be placed after A and B. (A....B....I/J....)
(From condition 5) L and J are items of the same type
Mixing above both conditions, we get that I, J, L are of same type and they must be biscuits as they cannot be candies (C is already a candy and they can be only 3 candies in total).
(From Condition 5) H is an item of a different type than L, J. Thus H will be in cookies group.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
empty	empty	C	(H/_)	(_/H)	empty	L					empty	D	E	F	K
empty	L					empty	empty	C	(H/_)	(_/H)	empty	D	E	F	K

(From condition 1) A and B are consecutive thus they lie in same group. They cannot be cookies are there is only 1 space left thus it will be in biscuit. (Biscuit will be A, B, I, J, L) and then G will be a cookies.
We know that AB are consecutive and I and J after them

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
empty	empty	C	(H/G)	(G/H)	empty	L	A	B	(I/J)	(J/I)	empty	D	E	F	K
empty	L	A	B	(I/J)	(J/I)	empty	empty	C	(H/G)	(G/H)	empty	D	E	F	K

G is not a type of biscuit (As we can clearly see that it is cookies in both cases)

QNo:- 49 ,Correct Answer:- *C*

Explanation:-

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

We have to arrange 3 types of item (B, C and S) (total 12 items) in 16 shelves space. We can have 1 or 2 empty selves (E) between 2 items.
It is known that K is on 16th shelves so we put that on 16th (from condition 4)
(From condition 4) It is given that D, E, F will be placed after biscuits and cookies so they will be in last item group. So we will put D, E, F in last shelves in same order and K will be last in that group.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
												D	E	F	K
												D	E	F	K

(from condition 6) there should be 2 empty shelve before C. We also know that C is candy and there are 3 candies
We can arrange them in 2 different ways.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
empty	empty				empty						empty	D	E	F	K
empty						empty	empty	C			empty	D	E	F	K

(from condition 7) There should be 1 empty shelve before L

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
empty	empty	C			empty	L					empty	D	E	F	K
empty	L					empty	empty	C			empty	D	E	F	K

Now (from condition 2), I and J will be placed after A and B. (A....B....I/J....)
(From condition 5) L and J are items of the same type
Mixing above both conditions, we get that I, J, L are of same type and they must be biscuits as they cannot be candies (C is already a candy and they can be only 3 candies in total).
(From Condition 5) H is an item of a different type than L, J. Thus H will be in cookies group.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
empty	empty	C	(H/_)	(_/H)	empty	L					empty	D	E	F	K
empty	L					empty	empty	C	(H/_)	(_/H)	empty	D	E	F	K

(From condition 1) A and B are consecutive thus they lie in same group. They cannot be cookies are there is only 1 space left thus it will be in biscuit. (Biscuit will be A, B, I, J, L) and then G will be a cookies.
We know that AB are consecutive and I and J after them

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
empty	empty	C	(H/G)	(G/H)	empty	L	A	B	(I/J)	(J/I)	empty	D	E	F	K
empty	L	A	B	(I/J)	(J/I)	empty	empty	C	(H/G)	(G/H)	empty	D	E	F	K

1, 2, 6, 12

QNo:- 50 ,Correct Answer:- *A*

Explanation:-

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

We have to arrange 3 types of item (B, C and S) (total 12 items) in 16 shelves space. We can have 1 or 2 empty selves (E) between 2 items.
It is known that K is on 16th shelves so we put that on 16th (from condition 4)
(From condition 4) It is given that D, E, F will be placed after biscuits and cookies so they will be in last item group. So we will put D, E, F in last shelves in same order and K will be last in that group.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
												D	E	F	K
												D	E	F	K

(from condition 6) there should be 2 empty shelve before C. We also know that C is candy and there are 3 candies
We can arrange them in 2 different ways.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
empty	empty				empty						empty	D	E	F	K
empty						empty	empty	C			empty	D	E	F	K

(from condition 7) There should be 1 empty shelve before L

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
empty	empty	C			empty	L					empty	D	E	F	K
empty	L					empty	empty	C			empty	D	E	F	K

Now (from condition 2), I and J will be placed after A and B. (A....B....I/J....)
(From condition 5) L and J are items of the same type
Mixing above both conditions, we get that I, J, L are of same type and they must be biscuits as they cannot be candies (C is already a candy and they can be only 3 candies in total).
(From Condition 5) H is an item of a different type than L, J. Thus H will be in cookies group.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
empty	empty	C	(H/_)	(_/H)	empty	L					empty	D	E	F	K
empty	L					empty	empty	C	(H/_)	(_/H)	empty	D	E	F	K

(From condition 1) A and B are consecutive thus they lie in same group. They cannot be cookies are there is only 1 space left thus it will be in biscuit. (Biscuit will be A, B, I, J, L) and then G will be a cookies.
We know that AB are consecutive and I and J after them

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
empty	empty	C	(H/G)	(G/H)	empty	L	A	B	(I/J)	(J/I)	empty	D	E	F	K
empty	L	A	B	(I/J)	(J/I)	empty	empty	C	(H/G)	(G/H)	empty	D	E	F	K

There are at least four shelves between items B and C

QNo:- 51 ,Correct Answer:- *A*

Explanation:- *Point 1, Only 2 triangles are possible, BCG and BFG. X, U and Z are standing at these points.*
Point 2, there is no one else in straight line of X.
Point 3, Y is on the straight line of U and W.
Point 4, Z and V are standing next to each other while U is also in the same row. Also, Z and are not on BG as then V won't be standing in the same row. Hence, X is on B or G.
Point 5, W is in different row/column then of V and Z.
Point 6, D is empty.

Case 1: X is at B and BCG is the triangle

X		
Z/U	U/Z	V

As W will be in the column where V and Z are not, W can be in Column 1 or 2. As Column 1 have X, it cannot have W (Point 2). That means Z is below X and U and W in middle Column. Also W is in either Row 1 or 4. By point 3, Y will also be in middle row. But not in front

	w/y	
X		
Z	U	V
	w/y	

Case 2: X is at G and BCG is the triangle

Z/U	
Z/U	X

Here, D is empty so VZU will be just like the previous case.

V	
U	
Z	X

But here, W and Y cannot be in the same row as of U because then one of them will be in column of X. So case invalid.
Case 3: X is at G and BFG is the triangle

w/y		
U	Z	V
w/y	X	

This is also invalid.
Case 4: X is at B and BFG is triangle

	V
X	Z
	X

Similar to case 2, this can be negated.

No one

QNo:- 52 ,Correct Answer:- *C*

Explanation:- *Point 1, Only 2 triangles are possible, BCG and BFG. X, U and Z are standing at these points.*
Point 2, there is no one else in straight line of X.
Point 3, Y is on the straight line of U and W.
Point 4, Z and V are standing next to each other while U is also in the same row. Also, Z and are not on BG as then V won't be standing in the same row. Hence, X is on B or G.
Point 5, W is in different row/column then of V and Z.
Point 6, D is empty.

Case 1: X is at B and BCG is the triangle

X		
Z/U	U/Z	V

As W will be in the column where V and Z are not, W can be in Column 1 or 2. As Column 1 have X, it cannot have W (Point 2). That means Z is below X and U and W in middle Column. Also W is in either Row 1 or 4. By point 3, Y will also be in middle row. But not in front

	w/y	
X		
Z	U	V
	w/y	

Case 2: X is at G and BCG is the triangle

Z/U	
Z/U	X

Here, D is empty so VZU will be just like the previous case.

V	
U	
Z	X

But here, W and Y cannot be in the same row as of U because then one of them will be in column of X. So case invalid.
Case 3: X is at G and BFG is the triangle

w/y		
U	Z	V
w/y	X	

This is also invalid.
Case 4: X is at B and BFG is triangle

	V
X	Z
	X

Similar to case 2, this can be negated.

U and Z only

QNo:- 53 ,Correct Answer:- *D*

Explanation:- *Point 1, Only 2 triangles are possible, BCG and BFG. X, U and Z are standing at these points.*
Point 2, there is no one else in straight line of X.
Point 3, Y is on the straight line of U and W.
Point 4, Z and V are standing next to each other while U is also in the same row. Also, Z and are not on BG as then V won't be standing in the same row. Hence, X is on B or G.
Point 5, W is in different row/column then of V and Z.
Point 6, D is empty.

Case 1: X is at B and BCG is the triangle

X		
Z/U	U/Z	V

As W will be in the column where V and Z are not, W can be in Column 1 or 2. As Column 1 have X, it cannot have W (Point 2). That means Z is below X and U and W in middle Column. Also W is in either Row 1 or 4. By point 3, Y will also be in middle row. But not in front

	w/y	
X		
Z	U	V
	w/y	

Case 2: X is at G and BCG is the triangle

Z/U	
Z/U	X

Here, D is empty so VZU will be just like the previous case.

V	
U	
Z	X

But here, W and Y cannot be in the same row as of U because then one of them will be in column of X. So case invalid.
Case 3: X is at G and BFG is the triangle

w/y		
U	Z	V
w/y	X	

This is also invalid.
Case 4: X is at B and BFG is triangle

	V
X	Z
	X

Similar to case 2, this can be negated.

QNo:- 54 ,Correct Answer:- *C*

Explanation:- *Point 1, Only 2 triangles are possible, BCG and BFG. X, U and Z are standing at these points.*
Point 2, there is no one else in straight line of X.
Point 3, Y is on the straight line of U and W.
Point 4, Z and V are standing next to each other while U is also in the same row. Also, Z and are not on BG as then V won't be standing in the same row. Hence, X is on B or G.
Point 5, W is in different row/column then of V and Z.
Point 6, D is empty.

Case 1: X is at B and BCG is the triangle

X		
Z/U	U/Z	V

As W will be in the column where V and Z are not, W can be in Column 1 or 2. As Column 1 have X, it cannot have W (Point 2). That means Z is below X and U and W in middle Column. Also W is in either Row 1 or 4. By point 3, Y will also be in middle row. But not in front

	w/y	
X		
Z	U	V
	w/y	

Case 2: X is at G and BCG is the triangle

Z/U	
Z/U	X

Here, D is empty so VZU will be just like the previous case.

V	
U	
Z	X

But here, W and Y cannot be in the same row as of U because then one of them will be in column of X. So case invalid.
Case 3: X is at G and BFG is the triangle

w/y		
U	Z	V
w/y	X	

This is also invalid.
Case 4: X is at B and BFG is triangle

	V	
X	Z	
	X	

Similar to case 2, this can be negated.

W and X only

QNo:- 55 ,Correct Answer:- *A*

Explanation:- *Of its nostalgic association with a pre-industrial past*

	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Total

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

In this, First thing that we can conclude is that those who played 1 round out of round 4, 5 and 6 must have scored one 5 in their first 3 shots. Similarly 2 and 3 can be concluded.
By this, Xyla must have scored 5 in each round. Tanzi scored a 5 in either round 1 or 3. Umeza must have scored 2 5's in 3 rounds. And so on.
Accordingly, we can also put a bracket of possible scores for each of them.
For example, Tanzi scored a 4 in round 2 and 5 in round 5 and also a 5 in either round 1 or 3. Hence Tanzi's total score out of these 3 round can be 14. In the remaining round, Tanzi could have scored 1-4 (not 5 because then round 5 would also be there).

	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Total
Tanzi	-	4	-	5	NP	NP	15-18
Umeza	-	-	-	1	2	NP	14-17
Wangdu	-	4	-	NP	NP	NP	6-12
Xyla	5	5	5	1	5	-	22-26
Yonita	-	-	3	5	NP	NP	14-17
Zeneca	-	-	-	5	5	NP	21-24

By point 1, Tanzi, Umeza and Yonita had same score. So possible scores for these 3 would be 15-17.
By point 2, only 1 player had scored a non 3x score. Combining this with point 1, we see that possible scores for the can only be 15 or else there will be 3 people with non 3x score.
By point 3, Highest is one more than double of lowest. As we see that highest possible score is 22-26, lowest can only be 11-12. If 11, highest would be 23 and if 12, highest would be 25.
As only one of these could have had a non 3x score, we can eliminate 11 and 23.
So Possible scores now are

	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Total
Tanzi	-	4	-	5	NP	NP	15
Umeza	-	-	-	1	2	NP	15
Wangdu	-	4	-	NP	NP	NP	12
Xyla	5	5	5	1	5	-	25
Yonita	-	-	3	5	NP	NP	15
Zeneca	-	-	-	5	5	NP	21/24

We can fill some of the scores as per total, in each round.

	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Total
Tanzi	-	4	-	5	NP	NP	15
Umeza	-	-	-	1	2	NP	15
Wangdu	4	4	4	NP	NP	NP	12
Xyla	5	5	5	1	5	4	25
Yonita	-	-	3	5	NP	NP	15
Zeneca	-	-	-	5	5	NP	21/24

Tanzi: 5/1, Umeza: 5/5/2, Yonita: 5/2 and Zeneca: 5/5/(1/4)
By point 4, 5 in round 1 are double than round 3.
Now if there is only 1 bullseye in round 3. Umeza and Zeneca doesn't score 5 in round 3, then they must score 5 in round 2. This

will make 5's in round 2 more than 2. So the case is invalid.

That means there must be 4 bullseyes in round 2.

	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Total
Tanzi	-	4	-	5	NP	NP	15
Umeza	-	5	-	1	2	NP	15
Wangdu	4	4	4	NP	NP	NP	12
Xyla	5	5	5	1	5	4	25
Yonita	2	5	3	5	NP	NP	15
Zeneca	-	5	-	5	5	NP	21/24

By point 5, Tanzi and Zeneca had same score in round 1 but different in round 3.

So one of them must have scored a 5 in either round 1 or 3. This means there are 2 bullseye in round 3 and Umeza must have scored it in round 1 only.

Concluding from this,

	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Total
Tanzi	5	4	1	5	NP	NP	15
Umeza	5	5	2	1	2	NP	15
Wangdu	4	4	4	NP	NP	NP	12
Xyla	5	5	5	1	5	4	25
Yonita	2	5	3	5	NP	NP	15
Zeneca	4	5	5	5	5	NP	24

25

QNo:- 56 ,Correct Answer:- *D*

Explanation:- *Of its nostalgic association with a pre-industrial past*

	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Total
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	

In this, First thing that we can conclude is that those who played 1 round out of round 4, 5 and 6 must have scored one 5 in their first 3 shots. Similarly 2 and 3 can be concluded.
By this, Xyla must have scored 5 in each round. Tanzi scored a 5 in either round 1 or 3. Umeza must have scored 2 5's in 3 rounds. And so on.
Accordingly, we can also put a bracket of possible scores for each of them.
For example, Tanzi scored a 4 in round 2 and 5 in round 5 and also a 5 in either round 1 or 3. Hence Tanzi's total score out of these 3 round can be 14. In the remaining round, Tanzi could have scored 1-4 (not 5 because then round 5 would also be there).

	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Total
Tanzi	-	4	-	5	NP	NP	15-18
Umeza	-	-	-	1	2	NP	14-17

Wangdu	-	4	-	NP	NP	NP	6-12
Xyla	5	5	5	1	5	-	22-26
Yonita	-	-	3	5	NP	NP	14-17
Zeneca	-	-	-	5	5	NP	21-24

By point 1, Tanzi, Umeza and Yonita had same score. So possible scores for these 3 would be 15-17.
By point 2, only 1 player had scored a non 3x score. Combining this with point 1, we see that possible scores for the can only be 15 or else there will be 3 people with non 3x score.
By point 3, Highest is one more than double of lowest. As we see that highest possible score is 22-26, lowest can only be 11-12. If 11, highest would be 23 and if 12, highest would be 25.
As only one of these could have had a non 3x score, we can eliminate 11 and 23.
So Possible scores now are

	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Total
Tanzi	-	4	-	5	NP	NP	15
Umeza	-	-	-	1	2	NP	15
Wangdu	-	4	-	NP	NP	NP	12
Xyla	5	5	5	1	5	-	25
Yonita	-	-	3	5	NP	NP	15
Zeneca	-	-	-	5	5	NP	21/24

We can fill some of the scores as per total, in each round.

	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Total
Tanzi	-	4	-	5	NP	NP	15
Umeza	-	-	-	1	2	NP	15
Wangdu	4	4	4	NP	NP	NP	12
Xyla	5	5	5	1	5	4	25
Yonita	-	-	3	5	NP	NP	15
Zeneca	-	-	-	5	5	NP	21/24

Tanzi: 5/1, Umeza: 5/5/2, Yonita: 5/2 and Zeneca: 5/5/(1/4)
By point 4, 5 in round 1 are double than round 3.
Now if there is only 1 bullseye in round 3. Umeza and Zeneca doesn't score 5 in round 3, then they must score 5 in round 2. This will make 5's in round 2 more than 2. So the case is invalid.

That means there must be 4 bullseyes in round 2.

	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Total
Tanzi	-	4	-	5	NP	NP	15
Umeza	-	5	-	1	2	NP	15
Wangdu	4	4	4	NP	NP	NP	12
Xyla	5	5	5	1	5	4	25
Yonita	2	5	3	5	NP	NP	15
Zeneca	-	5	-	5	5	NP	21/24

By point 5, Tanzi and Zeneca had same score in round 1 but different in round 3.

So one of them must have scored a 5 in either round 1 or 3. This means there are 2 bullseye in round 3 and Umeza must have scored it in round 1 only.

Concluding from this,

	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Total
Tanzi	5	4	1	5	NP	NP	15
Umeza	5	5	2	1	2	NP	15
Wangdu	4	4	4	NP	NP	NP	12
Xyla	5	5	5	1	5	4	25
Yonita	2	5	3	5	NP	NP	15
Zeneca	4	5	5	5	5	NP	24

24

QNo:- 57 ,Correct Answer:- *B*

Explanation:- *Of its nostalgic association with a pre-industrial past*

	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Total
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	

In this, First thing that we can conclude is that those who played 1 round out of round 4, 5 and 6 must have scored one 5 in their first 3 shots. Similarly 2 and 3 can be concluded.
By this, Xyla must have scored 5 in each round. Tanzi scored a 5 in either round 1 or 3. Umeza must have scored 2 5's in 3 rounds. And so on.
Accordingly, we can also put a bracket of possible scores for each of them.
For example, Tanzi scored a 4 in round 2 and 5 in round 5 and also a 5 in either round 1 or 3. Hence Tanzi's total score out of these 3 round can be 14. In the remaining round, Tanzi could have scored 1-4 (not 5 because then round 5 would also be there).

	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Total
Tanzi	-	4	-	5	NP	NP	15-18
Umeza	-	-	-	1	2	NP	14-17
Wangdu	-	4	-	NP	NP	NP	6-12
Xyla	5	5	5	1	5	-	22-26
Yonita	-	-	3	5	NP	NP	14-17
Zeneca	-	-	-	5	5	NP	21-24

By point 1, Tanzi, Umeza and Yonita had same score. So possible scores for these 3 would be 15-17.
By point 2, only 1 player had scored a non 3x score. Combining this with point 1, we see that possible scores for the can only be 15 or else there will be 3 people with non 3x score.
By point 3, Highest is one more than double of lowest. As we see that highest possible score is 22-26, lowest can only be 11-12. If 11, highest would be 23 and if 12, highest would be 25.
As only one of these could have had a non 3x score, we can eliminate 11 and 23.
So Possible scores now are

	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Total
Tanzi	-	4	-	5	NP	NP	15
Umeza	-	-	-	1	2	NP	15

Wangdu	-	4	-	NP	NP	NP	12
Xyla	5	5	5	1	5	-	25
Yonita	-	-	3	5	NP	NP	15
Zeneca	-	-	-	5	5	NP	21/24

We can fill some of the scores as per total, in each round.

	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Total
Tanzi	-	4	-	5	NP	NP	15
Umeza	-	-	-	1	2	NP	15
Wangdu	4	4	4	NP	NP	NP	12
Xyla	5	5	5	1	5	4	25
Yonita	-	-	3	5	NP	NP	15
Zeneca	-	-	-	5	5	NP	21/24

Tanzi: 5/1, Umeza: 5/5/2, Yonita: 5/2 and Zeneca: 5/5/(1/4)
By point 4, 5 in round 1 are double than round 3.
Now if there is only 1 bullseye in round 3. Umeza and Zeneca doesn't score 5 in round 3, then they must score 5 in round 2. This will make 5's in round 2 more than 2. So the case is invalid.

That means there must be 4 bullseyes in round 2.

	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Total
Tanzi	-	4	-	5	NP	NP	15
Umeza	-	5	-	1	2	NP	15
Wangdu	4	4	4	NP	NP	NP	12
Xyla	5	5	5	1	5	4	25
Yonita	2	5	3	5	NP	NP	15
Zeneca	-	5	-	5	5	NP	21/24

By point 5, Tanzi and Zeneca had same score in round 1 but different in round 3.

So one of them must have scored a 5 in either round 1 or 3. This means there are 2 bullseye in round 3 and Umeza must have scored it in round 1 only.

Concluding from this,

	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Total
Tanzi	5	4	1	5	NP	NP	15
Umeza	5	5	2	1	2	NP	15
Wangdu	4	4	4	NP	NP	NP	12
Xyla	5	5	5	1	5	4	25
Yonita	2	5	3	5	NP	NP	15
Zeneca	4	5	5	5	5	NP	24

Xyla was the highest scorer

QNo:- 58 ,Correct Answer:- *A*

Explanation:- *Of its nostalgic association with a pre-industrial past*

Actual CAT 2019 Slot I

	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Total
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	

In this, First thing that we can conclude is that those who played 1 round out of round 4, 5 and 6 must have scored one 5 in their first 3 shots. Similarly 2 and 3 can be concluded.
By this, Xyla must have scored 5 in each round. Tanzi scored a 5 in either round 1 or 3. Umeza must have scored 2 5's in 3 rounds. And so on.
Accordingly, we can also put a bracket of possible scores for each of them.
For example, Tanzi scored a 4 in round 2 and 5 in round 5 and also a 5 in either round 1 or 3. Hence Tanzi's total score out of these 3 round can be 14. In the remaining round, Tanzi could have scored 1-4 (not 5 because then round 5 would also be there).

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Wangdu	-	4	-	NP	NP	NP	6-12
Xyla	5	5	5	1	5	-	22-26
Yonita	-	-	3	5	NP	NP	14-17
Zeneca	-	-	-	5	5	NP	21-24

By point 1, Tanzi, Umeza and Yonita had same score. So possible scores for these 3 would be 15-17.
By point 2, only 1 player had scored a non 3x score. Combining this with point 1, we see that possible scores for the can only be 15 or else there will be 3 people with non 3x score.
By point 3, Highest is one more than double of lowest. As we see that highest possible score is 22-26, lowest can only be 11-12. If 11, highest would be 23 and if 12, highest would be 25.
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So Possible scores now are

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Yonita	-	-	3	5	NP	NP	15
Zeneca	-	-	-	5	5	NP	21/24

We can fill some of the scores as per total, in each round.

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Umeza	-	-	-	1	2	NP	15
Wangdu	4	4	4	NP	NP	NP	12
Xyla	5	5	5	1	5	4	25
Yonita	-	-	3	5	NP	NP	15
Zeneca	-	-	-	5	5	NP	21/24

Tanzi: 5/1, Umeza: 5/5/2, Yonita: 5/2 and Zeneca: 5/5/(1/4)
By point 4, 5 in round 1 are double than round 3.
Now if there is only 1 bullseye in round 3. Umeza and Zeneca doesn't score 5 in round 3, then they must score 5 in round 2. This will make 5's in round 2 more than 2. So the case is invalid.

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Xyla	5	5	5	1	5	4	25
Yonita	2	5	3	5	NP	NP	15
Zeneca	-	5	-	5	5	NP	21/24

By point 5, Tanzi and Zeneca had same score in round 1 but different in round 3.

So one of them must have scored a 5 in either round 1 or 3. This means there are 2 bullseye in round 3 and Umeza must have scored it in round 1 only.

Concluding from this,

	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Total
Tanzi	5	4	1	5	NP	NP	15
Umeza	5	5	2	1	2	NP	15
Wangdu	4	4	4	NP	NP	NP	12
Xyla	5	5	5	1	5	4	25
Yonita	2	5	3	5	NP	NP	15
Zeneca	4	5	5	5	5	NP	24

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QNo:- 59 ,Correct Answer:- *5*

Explanation:-

	IPC	SLL	Others	Total
Telengana	4	15	6	25
Puducherry	1		30	31
Kerala	8	15	12	35
Haryana	3	28	7	38
Maharashtra	15	35	6	56
Tamil Nadu	2	25	36	63
Goa	27	34	19	80
Karnataka	16	49	26	91
Delhi	64	36	45	145
West Bengal	0	520	0	520

So that is the rank of Kerala in the 'IPC crimes' category is 5.

QNo:- 60 ,Correct Answer:- *C*

Explanation:-

	IPC	SLL	Others	Total
Telengana	4	15	6	25
Puducherry	1		30	31
Kerala	8	15	12	35
Haryana	3	28	7	38
Maharashtra	15	35	6	56
Tamil Nadu	2	25	36	63
Goa	27	34	19	80
Karnataka	16	49	26	91
Delhi	64	36	45	145
West Bengal	0	520	0	520

The ratio of the total number of cases in IPC crimes to the total number in SLL crimes is in the two states where the highest total number of cases are registered =64:520+36=64:556=1:9

QNo:- 61 ,Correct Answer:- *A*

Explanation:-

	IPC	SLL	Others	Total
Telengana	4	15	6	25
Puducherry	1		30	31
Kerala	8	15	12	35
Haryana	3	28	7	38
Maharashtra	15	35	6	56
Tamil Nadu	2	25	36	63
Goa	27	34	19	80
Karnataka	16	49	26	91
Delhi	64	36	45	145
West Bengal	0	520	0	520

QNo:- 62 ,Correct Answer:- *5*

Explanation:-

	IPC	SLL	Others	Total
Telengana	4	15	6	25
Puducherry	1		30	31
Kerala	8	15	12	35
Haryana	3	28	7	38
Maharashtra	15	35	6	56
Tamil Nadu	2	25	36	63
Goa	27	34	19	80
Karnataka	16	49	26	91
Delhi	64	36	45	145
West Bengal	0	520	0	520

Delhi's rank in IPC is 1
Delhi's Rank in SLL is 3 (consider West Bengal also as West Bengalis at rank 1)
Delhi's rank in OTHERS is 1
Sum of ranks = 5

QNo:- 63 ,Correct Answer:- *C*

Explanation:- *Median scores will be the third score in ascending or descending order for any of the 6 aspects. Checking for above 4 aspects, we get median scores as*
Quality =62
Reliability=54
Cost=78
Customer Service=50
Least score is for Customer service.

QNo:- 64 ,Correct Answer:- *D*

Explanation:-

	Cost	Customer Service	Features	Reach	Quality	Reliability	Total
Vender 1	77	55	40	80	72	52	376
Vender 2	82	42	45	58	69	40	336
Vender 3	90	50	55	62	62	75	394
Vender 4	72	70	90	45	40	26	343

Vender 3 has highest final score.

QNo:- 65 ,Correct Answer:- *B*

Explanation:- *If we see the top 2 venders for each of the 6 aspects we will find our answer*

	Top 2 Vendors
Cost	2,3
Customer Service	4,1
Features	4,5
Reach	1,5
Quality	1,2
Reliability	3,5

Vendor 1 and 5 comes for 3 times. Thus Vendor 1 and vendor 5 is our answer.

QNo:- 66 ,Correct Answer:- *C*

Explanation:- *We will look for top 3 vendors in all aspects*

	Top 3 Vendors
Cost	2,3,1
Customer Service	4,1,3
Features	4,5,3
Reach	1,5,3
Quality	1,2,3
Reliability	3,5,1

Vendor 3 comes for maximum number of time. Thus vendor 3 will be our answer.

QNo:- 67 ,Correct Answer:- *9*

Explanation:- *Total = 15 lakh*
Let the amount invested in fixed deposit be = x at 6% SI
Remaining amount = 15-x... which was invested in 2:1 at rates 4% and 3% per annum.
So amount invested at 4% pa = 2/3 (15-x)
Amount invested at 3% pa = 1/3 (15-x)
Total interest after 1 year = 76000 = 0.76 lakh
So, (x×6×1)/100 + [2/3(15-x)×4×1]/100 + [1/3(15-x)×3×1]/100 = 0.76
x = 9 lakh
So 9 lakh will be the answer.

QNo:- 68 ,Correct Answer:- *880*

Explanation:- *A beat B by 11 and A beat C by 90m. That means B is already 79 m ahead of C. Now B will beat C by 80m and B is already 79m ahead so B will gain 1m lead in next 11m. So lead of 80m will be in the span of 80 × 11 = 880m*

QNo:- 69 ,Correct Answer:- D

Explanation:- $5.55^x = 1000$
$5.55 = 1000^{1/x}$ ... eq1
$0.555^y = 1000$
$0.555 = 1000^{1/y}$... eq2
Dividing eq 1 and 2
$10 = 1000^{(1/x-1/y)}$
So $1/x - 1/y = 1/3$

QNo:- 70 ,Correct Answer:- C

Explanation:- Let the income of Bimala is Rs. 100. So income of Amala is Rs. 120 and that of Kamala is Rs. 150. In second case, the income of Bimala becomes Rs. 110 and that of Kamala, it becomes Rs. 144.

$$\text{Required \%age} = \frac{144-110}{110}\times 100 = \frac{34}{110}\times 100 = 30.9 \approx 31\%$$

QNo:- 71 ,Correct Answer:- 3

Explanation:- $f(2) = f(1) \times f(1)$
Given $f(1) = 2$
So $f(2) = 4$
Similarly $f(4) = f(2) \times f(2) = 16$... eqn 1
Putting $n = 1$ in given equation
$f(a + 1) = 16$
so we can say that $a + 1 = 4$ ..... from eq 1
So $a = 3$
Alternate Sol:
As $f(x+y) = f(x)\, f(y) \Rightarrow f(x) = b^x$
Now $f(1) = 2 \Rightarrow b^1 = 2 \Rightarrow b = 2$.
Given that $f(a+1) + f(a+2) + f(a+3) +$ ----------$+ f(a+n) = 16(2^n - 1)$
$\Rightarrow 2^{a+1} + 2^{a+2} + 2^{a+3} +$ .....$+ 2^{a+n} = 16(2^n - 1)$

$$\Rightarrow \frac{2^{a+1}(2^n-1)}{2-1} = 16(2^n-1)$$

$\Rightarrow 2^{a+1} = 16 = 2^4 \Rightarrow a + 1 = 4 \Rightarrow a = 3$

QNo:- 72 ,Correct Answer:- 10

Explanation:- We have $f(n)=\begin{cases}n(n+1), \text{if } n \text{ is even.}\\ n+3, \text{if } n \text{ is odd.}\end{cases}$

Case I: If 'm' is odd :- m + 1 is even
∴ 8 f(m+1) - f(m) = 2
⇒ 8 (m+1) (m+2) - (m + 3) = 2
⇒ $8(m^2 + 3mn + 2) - m - 5 = 0$
⇒ $8m^2 + 24m + 16 - m - 5 = 0$
⇒ $8m^2 + 23m + 11 = 0$
Its discriminant = $(23)^2 - 4 \times 8 \times 11 = 529 - 352 = 177$
As the discriminant is not a perfect square, so we will not get integral values of 'm'.
Case II: If 'm' is even :- m +1 is odd
∴ 8 f(m+1) - f(m) = 2
⇒ 8(m+4) - m(m+1) = 2
⇒ $8m + 32 - m^2 - m = 2$
⇒ $m^2 - 7m - 30 = 0$
⇒ (m -10) (m+3) = 0
⇒ m = 10, -3
A 'm' is +ve integer ⇒ m = 10

QNo:- 73 ,Correct Answer:- 20

Explanation:- Let the boys are x. So girls are x + 30
Total students = 2x + 30
Given that (2x + 30) × 0.6 = x + 30
⇒ 1.2x + 18 = x + 30
⇒ 0.2x = 12 ⇒ x = 60
∴ Boys = 60 and girls = 90
∴ Total students = 150
Students who passed the exam = 68% of 150 = 102
∴ Girls passed the exam = 102 - 30 = 72
∴ Girls who failed = 90 - 72 = 18
∴ Required percentage $= \frac{18}{90} \times 100 = 20\%$

QNo:- 74 ,Correct Answer:- 6144

Explanation:- a1 = 6
a1 + a2 = 18
a2 = 12
a1 + a2 + a3 = 42
a3 = 24
a1 + a2 + a3 + a4 = 90
a4 = 48
So a1, a2, a3, a4...an are in GP with ratio 2
So a11 = $6 (2^{10}) = 6(1024) = 6144$

QNo:- 75 ,Correct Answer:- *A*

Explanation:- *Suppose first car starts 10:00 and it travelled for 6 hour. Assume speed of car 1 is 10km/h. So in 6 hour it travelled 60km.*
Now car B will travel same distance in 5 hour so speeed of car B = 60/5 = 12 km/hr
Percentage change = 2/10 × 100 = 20%

Now if we take 7 hours instead of 6 hours, then the distance travelled by first car = 70 km
This is the distance travelled by the second car in 6 hours.
Speed of second car = 70/6 = 11.67 km/hr
Percentage change = 1.67×100/10 = 16.7%

So percentage change is less than 20%.

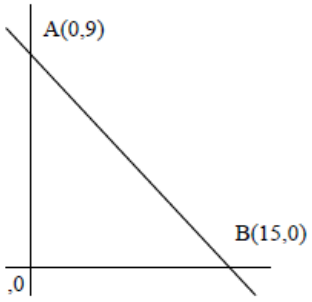
So at max it can be 20%

QNo:- 76 ,Correct Answer:- *5*

Explanation:- *Case I: If $x \geq 0 \Rightarrow |x| = x$.*
$\therefore |x|(6x^2 + 1) = 5x^2$
$\Rightarrow x(6x^2 + 1) = 5x^2$
$\Rightarrow x(6x^2 - 5x + 1) = 0$
$\Rightarrow x(3x-1)(2x-1) = 0$
$\Rightarrow \mathbf{x} = 0, \frac{1}{3}, \frac{1}{2}$
Case II: if $x < 0 \Rightarrow |x| = -x$
$\therefore |x|(6x^2 + 1) = 5x^2$
$\Rightarrow -x(6x^2 + 1) = 5x^2$
$\Rightarrow x(6x^2 + 5x + 1) = 0$
$\Rightarrow (6x^2 + 5x + 1) = 0$ [$\because x < 0$]
$\Rightarrow (3x + 1)(2x + 1) = 0$
$\mathbf{x} = \frac{-1}{3}, \frac{-1}{2}$
$\therefore$ total 5 solution are possible

QNo:- 77 ,Correct Answer:- 9

Explanation:- The equation of line is
$3x + 5y - 45 = 0$ .....(1)
Put $x = 0 \Rightarrow y = 9$
Put $y = 0 \Rightarrow x = 15$



∴ A(0,9) B(15,0) are point on coordinate axes where the line cuts the coordinate axes.
Length AB of hypotenuse
$= \sqrt{15^2 + 9^2} = \sqrt{306} = 17.5$
∴ circum radius = 1/2 × hy = 1/2 × 17.5
= 8.75 ≈ 9.

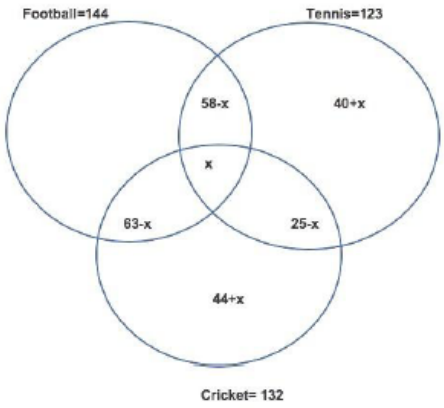
QNo:- 78 ,Correct Answer:- A

Explanation:- Let a, b and c be the three sides.
So, $a^2 + b^2 = 9$
$b^2 + c^2 = 12$
$c^2 + a^2 = 15$
So, $2a^2 + 2b^2 + 2c^2 = 36$
$a^2 + b^2 + c^2 = 18$
So, $c^2 = 9$, $c = 3$
$a = \sqrt{6}$
$b = \sqrt{3}$
So, ratio of shortest to longest = $1 : \sqrt{3}$

QNo:- 79 ,Correct Answer:- B

Explanation:- Given
$\log_5 (x + y) + \log_5 (x - y) = 3$ and
$\log_2 y - \log_2 x = 1 - \log_2 3$.
$\text{Log}_5 (x + y) + \log_5 (x - y) = \log_5 (x^2 - y^2) = 3$
$=> x^2 - y^2 = 5^3$ .....(1)
$\log_2 y - \log_2 x = 1 - \log_2 3$
$\log_2 (y/x) = \log_2 2 - \log_2 3$
$\log_2 (y/x) = \log_2 2/3$
$y/x = 2/3$
$x = 3y/2$ ..... putting this in eq (1)
$9y^2/4 - y^2 = 125$
$y^2 = 100$
$y = 10$
$x = 15$
$xy = 150$

QNo:- 80 ,Correct Answer:- *B*



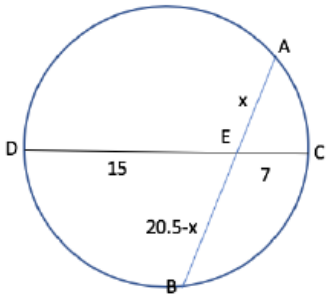
Explanation:-

So, only football 144 + 109 + x = 256
x = 3
So, only tennis = 40 + x = 43

QNo:- 81 ,Correct Answer:- *A*

Explanation:- *Herer xy = 616*
Also
$(x^3 – y^3)/(x-y)^3 = 157/3$
Now $x^3 – y^3 = (x-y)(x^2 + y^2 + xy)$
So
$(x^2 + y^2 + xy)/(x^2 + y^2 – 2xy) = 157/3$
Let $x^2 + y^2 = t$
So
$(t + 616)/(t-1232) = 157/3$
$t = 1268$
$x^2 + y^2 = 1268$
$(x + y)^2 – 2xy = 1268$
$(x + y)^2 - 2 \times 616 = 1268$
$(x + y)^2 = 2500$
$x + y = 50$

QNo:- 82 ,Correct Answer:- *D*



Explanation:-

When two chords intersect inside a circle then AE×BE = CE × DE
So x (20.5-x) = 15 × 7
So x = 10.5
So AE = 10.5
BE = 10
Difference in lengths = 0.5

QNo:- 83 ,Correct Answer:- 13

Explanation:- It is given that $(3M + 8M_C) \times x = (8M + 3M_C) \times 2x$

$\Rightarrow 3M + 8M_C = 16M + 6M_C$

$\Rightarrow 13M = 2M_C$

$\Rightarrow 1\ M_C = \frac{13}{2}\text{Men}$

2 Machines can do the work in 13 days

$\Rightarrow$ 1 Machine can do it in 26 days

So 13/2 Men can do the work in 26 days

$\Rightarrow$ 13 Men can do it in 13 days

QNo:- 84 ,Correct Answer:- A

Explanation:- Let money invested be in ratio 300x:400x:500x

Bina's interest income = 400x× 5 × 1/100

Amala's interest income = 300x × 6 × 1/100

Difference = 2x = 250

=> x = 125

Total interest income = 20x + 18x + 20x = 58x = 58 × 125 = 7250

QNo:- 85 ,Correct Answer:- D

Explanation:- We have $|x^2 - x - 6| = x+ 2 \Rightarrow x^2 - x - 6 = \pm (x + 2)$

Case I: If $x^2 - x - 6 = x + 2 \Rightarrow x^2 - 2x - 8 = 0$

$\Rightarrow (x - 4)(x + 2) = 0 \Rightarrow x = 4, -2$

Case II: If $x^2 - x - 6 = - (x+2)$

$\Rightarrow x^2 - x - 6 = -x-2$

$\Rightarrow x^2 = 4 \Rightarrow x = 2, -2$

$\therefore$ Product of distinct roots = 4 × 2 × (-2) = -16

QNo:- 86 ,Correct Answer:- D

Explanation:- Since in LHS we have cosθ whose value lies from – 1 to 1

So LHS can have value from – 2 to 2

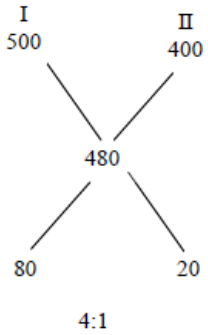
RHS will always be ≥ 2

Since $2^x + 2^{-x} = (2^x) + (1/2^x)$ and we know that sum of a number and its reciprocal is always greater than or equal to 2 if is real using AM ≥ GM

So they intersect only once at x = 0 when value of LHS and RHS is 2

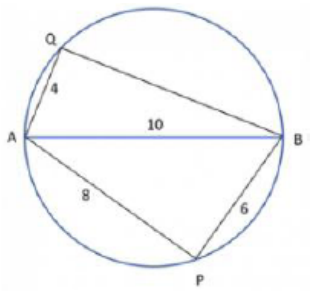
QNo:- 87 ,Correct Answer:- *A*

Explanation:- *One litre of liquid 1 weight 1 kg.*
⇒ Half litre of liquid 1 weights 500 gm
IIly half litre of liquid 2 weights 400 gm
Using the rule of allegation



∴ Ratio of liquid 1 and liquid 2 is 4:1
∴ liquid 1 is 4/5× 100 = 80% of the mixture

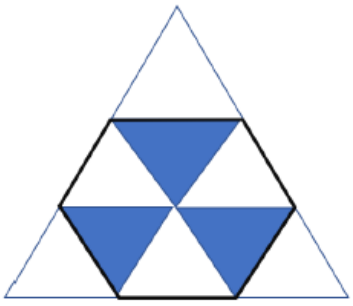
QNo:- 88 ,Correct Answer:- *C*



Explanation:-
Here ∠AQB = 90
Since angle is a semicircle is 90
So $AQ^2 + QB^2 = AB^2$
$100 = 16 + QB^2$
$QB = (84)^{1/2} = 9.1$ approx.

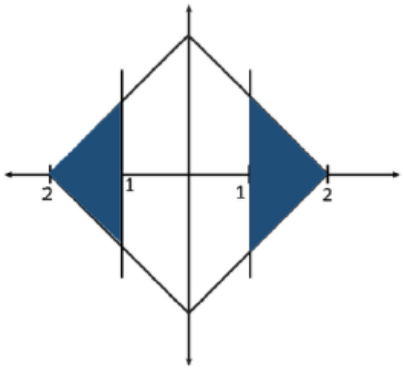
QNo:- 89 ,Correct Answer:- *B*

Explanation:-



We can see that the equilateral triangle is made up of 9 equal triangles
Hexagon is made up of 6 equal triangles of same size
So ratio of areas = 6/9 = 2/3

QNo:- 90 ,Correct Answer:- *2*



Explanation:-
Here we have required area shaded in blue where we have 4 triangle having height = 1 and base = 1
So total area = 4 × (1/2 × 1 × 1) = 2 units

QNo:- 91 ,Correct Answer:- *D*

Explanation:- *Let the score of Gautam = x*
∴ Total score = 21 ×62 + x = 1302 +x ..... (i)
Let the average of 21 students other than Ramesh is y
∴ 21y + 82.5 = 22(y+1)
⇒ 21y + 82.5 = 22y + 22
⇒ y = 60.5
∴ Total score = 22× 61.5 = 1353 ..... (2)
(1) & (2) ⇒ 1302 + x = 1353 ⇒ x = 51

QNo:- 92 ,Correct Answer:- *D*

Taking n = 3 and assuming $a_1 = 1$, $a_2 = 2$, $a_3 = 3$, $a_4 = 4$

$$\frac{1}{\sqrt{1}+\sqrt{2}}+\frac{1}{\sqrt{2}+\sqrt{3}}+\frac{1}{\sqrt{3}+\sqrt{4}}$$

Rationalizing the denominator of all term, we got

$$\frac{1}{\sqrt{2}+\sqrt{1}}\times\frac{\sqrt{2}-\sqrt{1}}{\sqrt{2}-\sqrt{1}}+\frac{1}{\sqrt{3}+\sqrt{2}}\times\frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}-\sqrt{2}}+\frac{1}{\sqrt{4}+\sqrt{3}}\times\frac{\sqrt{4}-\sqrt{3}}{\sqrt{4}-\sqrt{3}}$$

$$\Rightarrow\frac{\sqrt{2}-\sqrt{1}}{1}+\frac{\sqrt{3}-\sqrt{2}}{1}+\frac{\sqrt{4}-\sqrt{3}}{1}\Rightarrow\sqrt{2}-\sqrt{1}+\sqrt{3}-\sqrt{2}+\sqrt{4}-\sqrt{3}$$

$$\Rightarrow\sqrt{4}-\sqrt{1}=2-1=1$$

Now, using option

In option (4) $\frac{3}{\sqrt{1}+\sqrt{4}}\Rightarrow\frac{3}{3}=1$

So only option (4) satisfies

Explanation:-

QNo:- 93 ,Correct Answer:- *C*

Explanation:- *Let A can do 2x units per day and B can do y units per day*
As per the question
12(2x+y) = 9(x + 3y)
⇒ 24x + 12y = 9x + 27y
⇒ 15x = 15y ⇒ x = y
Let x= y = 1, so A will do 2 units/day and B will don 1 units/day
∴ Total work = 12 (2+1) = 36 units
∴ A alone will do it in 36/2 = 18 days

QNo:- 94 ,Correct Answer:- *A*

Explanation:- *Let total distance = 60km*
So, Bimal will travel 1/3rd of total distance for each given speed
That means with the speed of 10 he will travel for 20 km = 2 hour
And with the speed of 20 km/h he will travel for 20 km = 1 hour
And with the speed of 30 km he will travel for 20 km = 2/3 hour
So, total time = 3hour 40 min = 220 min
Now, for Amal 1/3rd of total travel time means with the speed 20 it will travel for 1 hour, with the speed of 10 he will travel for 1 hour and with the speed of 30 it will travel of 1 hour.
So, total 3 hour = 180 min
$\text{So, } \frac{40}{180} \times 100 = 22.22\% = 22\%$

QNo:- 95 ,Correct Answer:- *D*

Explanation:- *Let total marks be x*
Meena score 0.4x
After review marks are increased by 50%
So new marks = 0.4 × 1.5 = 0.6x
But she still fails by 35 marks
So passing mark = 0.6x + 35
Now if this post review score is increased by 20%
So it becomes 1.2×0.6x, she gets 7 marks more than passing marks
That means passing marks = 1.2 × 0.6x – 7 = 0.72x – 7
Equating passing marks in both the cases
0.6x + 35 = 0.72x – 7
0.12x = 42
X = 350
So passing marks = 350 × 0.6 + 35 = 245
So percentage marks required to pass = 245/350 × 100 = 70%

QNo:- 96 ,Correct Answer:- *B*

Explanation:- *X = price of pen*
Y = price of book
So, 0.95x + 1.15y = x + y + 7
-0.05x + 0.15y = 7 ------(1)
1.05x + 1.10y = x + y + 13
0.05x + 0.1y = 13 ------(2)
Adding (1) and (2)
We get 0.25y = 20
So, y = 80

QNo:- 97 ,Correct Answer:- *A*

Explanation:- *A travel 2πr = 60π*
B travel 2πr = 80π
So LCM = 240π
That means A travel for 4 revolution and B travel for 3 revolution.
We need gap of 5000 revolution
So B will travel 5000 × 240π cm distance in 45 min
So speed = 5000 × 240π / 45cm / min
To convert cm into km
1 km = 1000m and 1 m = 100cm
So, 1 km = 100000cm,
So 1cm = 10^{-5}km
And 60 min = 1 hour

$$\text{So, speed} = 5000\times 240\pi\frac{60}{45}\times\frac{1}{100000} = 16\pi$$

QNo:- 98 ,Correct Answer:- *3920*

Explanation:- *We want to go to (1, 1) to (8, 10) through (4, 6)*
So, first we will go to (1, 1) to (4, 6) and then (4, 6) to (8, 10)
$\text{So from (1, 1) to (4, 6) we have } 5 + 3 = 8 \text{ ways} = \frac{8!}{5!3!} = 56$
And from (4, 6) to (8, 10) we have 4 + 4 = 8 ways
$\text{So, } \frac{8!}{4!4!} = 70$
So, total 56 × 70 = 3920 ways

QNo:- 99 ,Correct Answer:- *D*

Explanation:- $2^{(19/2+4+3n)} \times 3^{(4+2m)} = 2^{(3/2+4m)} \times 3^{(n)}$
Comparing powers of 2 and 3 in LHS and RHS
3n + 12 = 4m
4m – 3n = 12
And
4+2m = n
2m – n= - 4
Solving both
n = - 20 and m = - 12

QNo:- 100 ,Correct Answer:- *A*

Explanation:- *Population in 2019 = 1000*
Population in 2020 = 1000× 2 +3 = 2003 = (1003) × 2-3
Population in 2021 = 2 × 2003 + 3 = 4009 = 4 × (1003) - 3 = 2^2 (1003) - 3
Population in 2022 = 2(4009) + 3 = 8021 = 8(1003) - 3 = 2^3 (1003) -3
∴ we can see that population in 2034 is 2^{15} (1003) - 3

Directions of Test

Test Name	Actual CAT 2019 Slot II	Total Questions	100	Total Time	180 Mins

Section Name	No. of Questions	Time limit	Marks per Question	Negative Marking
Verbal Ability	34	1:0(h:m)	3	1/3
DI & Reasoning	32	1:0(h:m)	3	1/3
Quantitative Ability	34	1:0(h:m)	3	1/3

Section : Verbal Ability

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 1

British colonial policy . . . went through two policy phases, or at least there were two strategies between which its policies actually oscillated, sometimes to its great advantage. At first, the new colonial apparatus exercised caution, and occupied India by a mix of military power and subtle diplomacy, the high ground in the middle of the circle of circles. This, however, pushed them into contradictions. For, whatever their sense of the strangeness of the country and the thinness of colonial presence, the British colonial state represented the great conquering discourse of Enlightenment rationalism, entering India precisely at the moment of its greatest unchecked arrogance. As inheritors and representatives of this discourse, which carried everything before it, this colonial state could hardly adopt for long such a self-denying attitude. It had restructured everything in Europe—the productive system, the political regimes, the moral and cognitive orders—and would do the same in India, particularly as some empirically inclined theorists of that generation considered the colonies a massive laboratory of utilitarian or other theoretical experiments. Consequently, the colonial state could not settle simply for eminence at the cost of its marginality; it began to take initiatives to introduce the logic of modernity into Indian society. But this modernity did not enter a passive society. Sometimes, its initiatives were resisted by pre-existing structural forms. At times, there was a more direct form of collective resistance. Therefore the map of continuity and discontinuity that this state left behind at the time of independence was rather complex and has to be traced with care.

Most significantly, of course, initiatives for . . . modernity came to assume an external character. The acceptance of modernity came to be connected, ineradicably, with subjection. This again points to two different problems, one theoretical, the other political. Theoretically, because modernity was externally introduced, it is explanatorily unhelpful to apply the logical format of the 'transition process' to this pattern of change. Such a logical format would be wrong on two counts. First, however subtly, it would imply that what was proposed to be built was something like European capitalism. (And, in any case, historians have forcefully argued that what it was to replace was not like feudalism, with or without modificatory adjectives.) But, more fundamentally, the logical structure of endogenous change does not apply here.

Here transformation agendas attack as an external force. This externality is not something that can be casually mentioned and forgotten. It is inscribed on every move, every object, every proposal, every legislative act, each line of causality. It comes to be marked on the epoch itself. This repetitive emphasis on externality should not be seen as a nationalist initiative that is so well rehearsed in Indian social science. . . .

Quite apart from the externality of the entire historical proposal of modernity, some of its contents were remarkable. . . . Economic reforms, or rather alterations did not foreshadow the construction of a classical capitalist economy, with its necessary emphasis on extractive and transport sectors. What happened was the creation of a degenerate version of capitalism —what early dependency theorists called the 'development of underdevelopment'.

All of the following statements about British colonialism can be inferred from the first paragraph, EXCEPT that it:

A) was at least partly an outcome of Enlightenment rationalism
B) was at least partly shaped by the project of European modernity
C) faced resistance from existing structural forms of Indian modernity
D) allowed the treatment of colonies as experimental sites

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 2

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Consequently, the colonial state could not settle simply for eminence at the cost of its marginality; it began to take initiatives to introduce the logic of modernity into Indian society." Which of the following best captures the sense of this statement?

A) The colonial enterprise was a costly one; so to justify the cost it began to take initiatives to introduce the logic of modernity into Indian society.
B) The cost of the colonial state's eminence was not settled; therefore, it took the initiative of introducing modernity into Indian society.
C) The colonial state's eminence was unsettled by its marginal position; therefore, it developed Indian society by modernising it.
D) The colonial state felt marginalised from Indian society because of its own modernity; therefore, it sought to address that marginalisation by bringing its modernity to change Indian society.

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 3

British colonial policy . . . went through two policy phases, or at least there were two strategies between which its policies actually oscillated, sometimes to its great advantage. At first, the new colonial apparatus exercised caution, and occupied India by a mix of military power and subtle diplomacy, the high ground in the middle of the circle of circles. This, however, pushed them into contradictions. For, whatever their sense of the strangeness of the country and the thinness of colonial presence, the British colonial state represented the great conquering discourse of Enlightenment rationalism, entering India precisely at the moment of its greatest unchecked arrogance. As inheritors and representatives of this discourse, which carried everything before it, this colonial state could hardly adopt for long such a self-denying attitude. It had restructured everything in Europe—the productive system, the political regimes, the moral and cognitive orders—and would do the same in India, particularly as some empirically inclined theorists of that generation considered the colonies a massive laboratory of utilitarian or other theoretical experiments. Consequently, the colonial state could not settle simply for eminence at the cost of its marginality; it began to take initiatives to introduce the logic of modernity into Indian society. But this modernity did not enter a passive society. Sometimes, its initiatives were resisted by pre-existing structural forms. At times, there was a more direct form of collective resistance. Therefore the map of continuity and discontinuity that this state left behind at the time of independence was rather complex and has to be traced with care.

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Which one of the following 5-word sequences best captures the flow of the arguments in the passage?

A) Colonial policy—Enlightenment—external modernity—subjection— underdevelopment
B) Military power—colonialism—restructuring—feudalism—capitalism
C) Military power—arrogance—laboratory—modernity—capitalism
D) Colonial policy—arrogant rationality—resistance—independence—development

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 4

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Which of the following observations is a valid conclusion to draw from the author's statement that "the logical structure of endogenous change does not apply here. Here transformation agendas attack as an external force"?

A) The transformation of Indian society did not happen organically, but was forced by colonial agendas.
B) The endogenous logic of colonialism can only bring change if it attacks and transforms external forces.
C) Colonised societies cannot be changed through logic; they need to be transformed with external force.
D) Indian society is not endogamous; it is more accurately characterised as aggressively exogamous.

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 5

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All of the following statements, if true, could be seen as supporting the arguments in the passage, EXCEPT:

A) the introduction of capitalism in India was not through the transformation of feudalism, as happened in Europe
B) modernity was imposed upon India by the British and, therefore, led to underdevelopment
C) throughout the history of colonial conquest, natives have often been experimented on by the colonisers
D) the change in British colonial policy was induced by resistance to modernity in Indian society

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 6

For two years, I tracked down dozens of . . . Chinese in Upper Egypt [who were] selling lingerie. In a deeply conservative region, where Egyptian families rarely allow women to work or own businesses, the Chinese flourished because of their status as outsiders. They didn't gossip, and they kept their opinions to themselves. In a New Yorker article entitled "Learning to Speak Lingerie," I described the Chinese use of Arabic as another non-threatening characteristic. I wrote, "Unlike Mandarin, Arabic is inflected for gender, and Chinese dealers, who learn the language strictly by ear, often pick up speech patterns from female customers. I've come to think of it as the lingerie dialect, and there's something disarming about these Chinese men speaking in the feminine voice." . . .

When I wrote about the Chinese in the New Yorker, most readers seemed to appreciate the unusual perspective. But as I often find with topics that involve the Middle East, some people had trouble getting past the black-and-white quality of a byline. "This piece is so orientalist I don't know what to do," Aisha Gani, a reporter who worked at The Guardian, tweeted. Another colleague at the British paper, Iman Amrani, agreed: "I wouldn't have minded an article on the subject written by an Egyptian woman—probably would have had better insight." . . .

As an MOL (man of language), I also take issue with this kind of essentialism. Empathy and understanding are not inherited traits, and they are not strictly tied to gender and race. An individual who wrestles with a difficult language can learn to be more sympathetic to outsiders and open to different experiences of the world. This learning process—the embarrassments, the frustrations, the gradual sense of understanding and connection—is invariably transformative. In Upper Egypt, the Chinese experience of struggling to learn Arabic and local culture had made them much more thoughtful. In the same way, I was interested in their lives not because of some kind of voyeurism, but because I had also experienced Egypt and Arabic as an outsider. And both the Chinese and the Egyptians welcomed me because I spoke their languages. My identity as a white male was far less important than my ability to communicate.

And that easily lobbed word—"Orientalist"—hardly captures the complexity of our interactions. What exactly is the dynamic when a man from Missouri observes a Zhejiang native selling lingerie to an Upper Egyptian woman? . . . If all of us now stand beside the same river, speaking in ways we all understand, who's looking east and who's looking west? Which way is Oriental?

For all of our current interest in identity politics, there's no corresponding sense of identity linguistics. You are what you speak—the words that run throughout your mind are at least as fundamental to your selfhood as is your ethnicity or your gender. And sometimes it's healthy to consider human characteristics that are not inborn, rigid, and outwardly defined. After all, you can always learn another language and change who you are.

The author's critics would argue that:

A) Language is insufficient to bridge cultural barriers B) Linguistic politics can be erased
C) Empathy can overcome identity politics D) Orientalism cannot be practiced by Egyptians

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 7

For two years, I tracked down dozens of . . . Chinese in Upper Egypt [who were] selling lingerie. In a deeply conservative region, where Egyptian families rarely allow women to work or own businesses, the Chinese flourished because of their status as outsiders. They didn't gossip, and they kept their opinions to themselves. In a New Yorker article entitled "Learning to Speak Lingerie," I described the Chinese use of Arabic as another non-threatening characteristic. I wrote, "Unlike Mandarin, Arabic is inflected for gender, and Chinese dealers, who learn the language strictly by ear, often pick up speech patterns from female customers. I've come to think of it as the lingerie dialect, and there's something disarming about these Chinese men speaking in the feminine voice." . . .

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A French ethnographer decides to study the culture of a Nigerian tribe. Which of the following is most likely to be the view of the author of the passage?

A) The author would encourage the ethnographer and recommend him/her to hire a good translator for the purpose of holding interviews.
B) The author would discourage the ethnographer from conducting the study as Nigerian ethnographers can better understand the tribe.
C) The author would encourage the ethnographer, but ask him/her to be mindful of his/her racial and gender identity in the process.
D) The author would encourage the ethnographer, but ask him/her to first learn the language of the Nigerian tribe s/he wishes to study.

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 8

For two years, I tracked down dozens of . . . Chinese in Upper Egypt [who were] selling lingerie. In a deeply conservative region, where Egyptian families rarely allow women to work or own businesses, the Chinese flourished because of their status as outsiders. They didn't gossip, and they kept their opinions to themselves. In a New Yorker article entitled "Learning to Speak Lingerie," I described the Chinese use of Arabic as another non-threatening characteristic. I wrote, "Unlike Mandarin, Arabic is inflected for gender, and Chinese dealers, who learn the language strictly by ear, often pick up speech patterns from female customers. I've come to think of it as the lingerie dialect, and there's something disarming about these Chinese men speaking in the feminine voice." . . .

When I wrote about the Chinese in the New Yorker, most readers seemed to appreciate the unusual perspective. But as I often find with topics that involve the Middle East, some people had trouble getting past the black-and-white quality of a byline. "This piece is so orientalist I don't know what to do," Aisha Gani, a reporter who worked at The Guardian, tweeted. Another colleague at the British paper, Iman Amrani, agreed: "I wouldn't have minded an article on the subject written by an Egyptian woman—probably would have had better insight." . . .

As an MOL (man of language), I also take issue with this kind of essentialism. Empathy and understanding are not inherited traits, and they are not strictly tied to gender and race. An individual who wrestles with a difficult language can learn to be more sympathetic to outsiders and open to different experiences of the world. This learning process—the embarrassments, the frustrations, the gradual sense of understanding and connection—is invariably transformative. In Upper Egypt, the Chinese experience of struggling to learn Arabic and local culture had made them much more thoughtful. In the same way, I was interested in their lives not because of some kind of voyeurism, but because I had also experienced Egypt and Arabic as an outsider. And both the Chinese and the Egyptians welcomed me because I spoke their languages. My identity as a white male was far less important than my ability to communicate.

And that easily lobbed word—"Orientalist"—hardly captures the complexity of our interactions. What exactly is the dynamic when a man from Missouri observes a Zhejiang native selling lingerie to an Upper Egyptian woman? . . . If all of us now stand beside the same river, speaking in ways we all understand, who's looking east and who's looking west? Which way is Oriental?

For all of our current interest in identity politics, there's no corresponding sense of identity linguistics. You are what you speak—the words that run throughout your mind are at least as fundamental to your selfhood as is your ethnicity or your gender. And sometimes it's healthy to consider human characteristics that are not inborn, rigid, and outwardly defined. After all, you can always learn another language and change who you are.

According to the passage, which of the following is not responsible for language's ability to change us?

A) Language's ability to mediate the impact of identity markers one is born with.
B) Language's intrinsic connection to our notions of self and identity.
C) The twists and turns in the evolution of language over time.
D) The ups and downs involved in the course of learning a language.

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 9

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Which of the following can be inferred from the author's claim, "Which way is Oriental?"

A) Goodwill alone mitigates cultural hierarchies and barriers.
B) Orientalism is a discourse of the past, from colonial times, rarely visible today.
C) Globalisation has mitigated cultural hierarchies and barriers.
D) Learning another language can mitigate cultural hierarchies and barriers.

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 10

War, natural disasters and climate change are destroying some of the world's most precious cultural sites. Google is trying to help preserve these archaeological wonders by allowing users access to 3D images of these treasures through its site.

But the project is raising questions about Google's motivations and about who should own the digital copyrights. Some critics call it a form of "digital colonialism."

When it comes to archaeological treasures, the losses have been mounting. ISIS blew up parts of the ancient city of Palmyra in Syria and an earthquake hit Bagan, an ancient city in Myanmar, damaging dozens of temples, in 2016. In the past, all archaeologists and historians had for restoration and research were photos, drawings, remnants and intuition.

But that's changing. Before the earthquake at Bagan, many of the temples on the site were scanned. . . . [These] scans . . . are on Google's Arts & Culture site. The digital renditions allow viewers to virtually wander the halls of the temple, look up-close at paintings and turn the building over, to look up at its chambers. [Google Arts & Culture] works with museums and other nonprofits to put high-quality images online. The images of the temples in Bagan are part of a collaboration with CyArk, a nonprofit that creates the 3D scanning of historic sites. . . . Google says [it] doesn't make money off this website, but it fits in with Google's mission to make the world's information available and useful.

Critics say the collaboration could be an attempt by a large corporation to wrap itself in the sheen of culture. Ethan Watrall, an archaeologist, professor at Michigan State University and a member of the Society for American Archaeology, says he's not comfortable with the arrangement between CyArk and Google. Watrall says this project is just a way for Google to promote Google. "They want to make this material accessible so people will browse it and be filled with wonder by it," he says. "But at its core, it's all about advertisements and driving traffic." Watrall says these images belong on the site of a museum or educational institution, where there is serious scholarship and a very different mission. . . .

[There's] another issue for some archaeologists and art historians. CyArk owns the copyrights of the scans — not the countries where these sites are located. That means the countries need CyArk's permission to use these images for commercial purposes.

Erin Thompson, a professor of art crime at John Jay College of Criminal Justice in New York City, says it's the latest example of a Western nation appropriating a foreign culture, a centuries-long battle.CyArk says it copyrights the scans so no one can use them in an inappropriate way. The company says it works closely with authorities during the process, even training local people to help. But critics like Thompson are not persuaded....She would prefer the scans to be owned by the countries and people where these sites are located.

Of the following arguments, which one is LEAST likely to be used by the companies that digitally scan cultural sites?

A) It provides images free of cost to all users
B) It enables people who cannot physically visit these sites to experience them
C) It allows a large corporation to project itself as a protector of culture
D) It helps preserve precious images in case the sites are damaged or destroyed

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 11

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By “digital colonialism”, critics of the CyArk–Google project are referring to the fact that:

A) CyArk and Google have not shared the details of digitisation with the host countries.
B) the scanning process can damage delicate frescos and statues at the sites.
C) countries where the scanned sites are located do not own the scan copyrights.
D) CyArk and Google have been scanning images without copyright permission from host countries.

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 12

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Which of the following, if true, would most strongly invalidate Dr. Watrall's objections?

A) CyArk does not own the copyright on scanned images of archaeological sites.
B) CyArk uploads its scanned images of archaeological sites onto museum websites
C) Google takes down advertisements on its website hosting CyArk's scanned images
D) There is a ban on CyArk scanning archeological sites located in other countries

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 13

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In Dr. Thompson's view, CyArk owning the copyright of its digital scans of archaeological sites is akin to:

A) the seizing of ancient Egyptian artefacts by a Western museum.
B) the illegal downloading of content from the internet.
C) digital platforms capturing users' data for market research
D) tourists uploading photos of monuments onto social media.

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 14

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Based on his views mentioned in the passage, one could best characterise Dr. Watrall as being:

A) uneasy about the marketing of archaeological images for commercial use by firms such as Google and CyArk.
B) dismissive of laypeople's access to specialist images of archaeological and cultural sites.
C) opposed to the use of digital technology in archaeological and cultural sites in developing countries.
D) critical about the links between a non-profit and a commercial tech platform for distributing archaeological images

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 15

The magic of squatter cities is that they are improved steadily and gradually by their residents. To a planner's eye, these cities look chaotic. I trained as a biologist and to my eye, they look organic. Squatter cities are also unexpectedly green. They have maximum density—1 million people per square mile in some areas of Mumbai—and have minimum energy and material use. People get around by foot, bicycle, rickshaw, or the universal shared taxi.

Not everything is efficient in the slums, though. In the Brazilian favelas where electricity is stolen and therefore free, people leave their lights on all day. But in most slums recycling is literally a way of life. The Dharavi slum in Mumbai has 400 recycling units and 30,000 ragpickers. Six thousand tons of rubbish are sorted every day. In 2007, the Economist reported that in Vietnam and Mozambique, "Waves of gleaners sift the sweepings of Hanoi's streets, just as Mozambiquan children pick over the rubbish of Maputo's main tip. Every city in Asia and Latin America has an industry based on gathering up old cardboard boxes." . . .

In his 1985 article, Calthorpe made a statement that still jars with most people: "The city is the most environmentally benign form of human settlement. Each city dweller consumes less land, less energy, less water, and produces less pollution than his counterpart in settlements of lower densities." "Green Manhattan" was the inflammatory title of a 2004 New Yorker article by David Owen. "By the most significant measures," he wrote, "New York is the greenest community in the United States, and one of the greenest cities in the world . . . The key to New York's relative environmental benignity is its extreme compactness. Placing one and a half million people on a twenty-three-square-mile island sharply reduces their opportunities to be wasteful." He went on to note that this very compactness forces people to live in the world's most energy-efficient apartment buildings. . . .

Urban density allows half of humanity to live on 2.8 per cent of the land. Consider just the infrastructure efficiencies. According to a 2004 UN report: "The concentration of population and enterprises in urban areas greatly reduces the unit cost of piped water, sewers, drains, roads, electricity, garbage collection, transport, health care, and schools." . . .

[T]he nationally subsidised city of Manaus in northern Brazil "answers the question" of how to stop deforestation: give people decent jobs. Then they can afford houses, and gain security. One hundred thousand people who would otherwise be deforesting the jungle around Manaus are now prospering in town making such things as mobile phones and televisions. . . .

Of course, fast-growing cities are far from an unmitigated good. They concentrate crime, pollution, disease and injustice as much as business, innovation, education and entertainment. But if they are overall a net good for those who move there, it is because cities offer more than just jobs. They are transformative: in the slums, as well as the office towers and leafy suburbs, the progress is from hick to metropolitan to cosmopolitan . . .

We can infer that Calthorpe's statement "still jars" with most people because most people:

A) do not consider cities to be eco-friendly places B) do not regard cities as good places to live in
C) regard cities as places of disease and crime D) consider cities to be very crowded and polluted

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 16

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From the passage it can be inferred that cities are good places to live in for all of the following reasons EXCEPT that they:

A) offer employment opportunities B) have suburban areas as well as office areas
C) help prevent destruction of the environment D) contribute to the cultural transformation of residents

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

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In the context of the passage, the author refers to Manaus in order to:

A) explain where cities source their labour for factories B) describe the infrastructure efficiencies of living in a city
C) explain how urban areas help the environment D) promote cities as employment hubs for people

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

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[T]he nationally subsidised city of Manaus in northern Brazil "answers the question" of how to stop deforestation: give people decent jobs. Then they can afford houses, and gain security. One hundred thousand people who would otherwise be deforesting the jungle around Manaus are now prospering in town making such things as mobile phones and televisions. . . .

Of course, fast-growing cities are far from an unmitigated good. They concentrate crime, pollution, disease and injustice as much as business, innovation, education and entertainment. But if they are overall a net good for those who move there, it is because cities offer more than just jobs. They are transformative: in the slums, as well as the office towers and leafy suburbs, the progress is from hick to metropolitan to cosmopolitan . . .

According to the passage, squatter cities are environment-friendly for all of the following reasons EXCEPT:

A) they sort out garbage B) they recycle material C) their streets are kept clean
D) their transportation is energy efficient

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 19

The magic of squatter cities is that they are improved steadily and gradually by their residents. To a planner's eye, these cities look chaotic. I trained as a biologist and to my eye, they look organic. Squatter cities are also unexpectedly green. They have maximum density—1 million people per square mile in some areas of Mumbai—and have minimum energy and material use. People get around by foot, bicycle, rickshaw, or the universal shared taxi.

Not everything is efficient in the slums, though. In the Brazilian favelas where electricity is stolen and therefore free, people leave their lights on all day. But in most slums recycling is literally a way of life. The Dharavi slum in Mumbai has 400 recycling units and 30,000 ragpickers. Six thousand tons of rubbish are sorted every day. In 2007, the Economist reported that in Vietnam and Mozambique, "Waves of gleaners sift the sweepings of Hanoi's streets, just as Mozambiquan children pick over the rubbish of Maputo's main tip. Every city in Asia and Latin America has an industry based on gathering up old cardboard boxes." . . .

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Which one of the following statements would undermine the author's stand regarding the greenness of cities?

A) Sorting through rubbish contributes to the rapid spread of diseases in the slums
B) The high density of cities leads to an increase in carbon dioxide and global warming
C) The compactness of big cities in the West increases the incidence of violent crime
D) Over the last decade the cost of utilities has been increasing for city dwellers

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 20

Around the world, capital cities are disgorging bureaucrats. In the post-colonial fervour of the 20th century, coastal capitals picked by trade-focused empires were spurned for "regionally neutral" new ones .... But decamping wholesale is costly and unpopular; governments these days prefer piecemeal dispersal. The trend reflects how the world has changed. In past eras, when information travelled at a snail's pace, civil servants had to cluster together. But now desk-workers can ping emails and video-chat around the world. Travel for face-to-face meetings may be unavoidable, but transport links, too, have improved. . . .

Proponents of moving civil servants around promise countless benefits. It disperses the risk that a terrorist attack or natural disaster will cripple an entire government. Wonks in the sticks will be inspired by new ideas that walled-off capitals cannot conjure up. Autonomous regulators perform best far from the pressure and lobbying of the big city. Some even hail a cure for ascendant cynicism and populism. The unloved bureaucrats of faraway capitals will become as popular as firefighters once they mix with regular folk.

Beyond these sunny visions, dispersing central-government functions usually has three specific aims: to improve the lives of both civil servants and those living in clogged capitals; to save money; and to redress regional imbalances. The trouble is that these goals are not always realised.

The first aim—improving living conditions—has a long pedigree. After the second world war Britain moved thousands of civil servants to "agreeable English country towns" as London was rebuilt. But swapping the capital for somewhere smaller is not always agreeable. Attrition rates can exceed 80%. The second reason to pack bureaucrats off is to save money. Office space costs far more in capitals. Agencies that are moved elsewhere can often recruit better workers on lower salaries than in capitals, where well-paying multinationals mop up talent.

The third reason to shift is to rebalance regional inequality ....Norway treats federal jobs as a resource every region deserves to enjoy, like profits from oil. Where government jobs go, private ones follow Sometimes the aim is to fulfil the potential of a country's second-tier cities. Unlike poor, remote places, bigger cities can make the most of relocated government agencies, linking them to local universities and businesses and supplying a better-educated workforce. The decision in 1946 to set up America's Centres for Disease Control in Atlanta rather than Washington, D.C., has transformed the city into a hub for health-sector research and business.

The dilemma is obvious. Pick small, poor towns, and areas of high unemployment get new jobs, but it is hard to attract the most qualified workers; opt for larger cities with infrastructure and better-qualified residents, and the country's most deprived areas see little benefit. . . .

Others contend that decentralisation begets corruption by making government agencies less accountable. A study in America found that state-government corruption is worse when the state capital is isolated—journalists, who tend to live in the bigger cities, become less watchful of those in power.

The "long pedigree" of the aim to shift civil servants to improve their living standards implies that this move:

A) takes a long time to achieve its intended outcomes B) has become common practice in several countries worldwide
C) is supported by politicians and the ruling elites D) is not a new idea and has been tried in the past

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 21

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According to the author, relocating government agencies has not always been a success for all of the following reasons EXCEPT:

A) a rise in pollution levels and congestion in the new locations
B) high staff losses, as people may not be prepared to move to smaller towns
C) the difficulty of attracting talented, well-skilled people in more remote areas
D) increased avenues of corruption away from the capital city

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 22

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The "dilemma" mentioned in the passage refers to:

A) relocating government agencies to boost growth in remote areas with poor amenities or to relatively larger cities with good amenities.
B) concentrating on decongesting large cities or focusing on boosting employment in relatively larger cities.
C) encouraging private enterprises to relocate to smaller towns or not incentivising them in order to keep government costs in those towns low.
D) keeping government agencies in the largest city with good infrastructure or moving them to a remote area with few amenities.

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 23

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People who support decentralising central government functions are LEAST likely to

A) Policy makers may benefit from fresh thinking in a new environment
B) It reduces expenses as infrastructure costs and salaries are lower in smaller cities
C) More independence could be enjoyed by regulatory bodies located away from political centres
D) It could weaken the nexus between bureaucrats and media in the capital

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 24

Around the world, capital cities are disgorging bureaucrats. In the post-colonial fervour of the 20th century, coastal capitals picked by trade-focused empires were spurned for "regionally neutral" new ones .... But decamping wholesale is costly and unpopular; governments these days prefer piecemeal dispersal. The trend reflects how the world has changed. In past eras, when information travelled at a snail's pace, civil servants had to cluster together. But now desk-workers can ping emails and video-chat around the world. Travel for face-to-face meetings may be unavoidable, but transport links, too, have improved. . . .

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Others contend that decentralisation begets corruption by making government agencies less accountable. A study in America found that state-government corruption is worse when the state capital is isolated—journalists, who tend to live in the bigger cities, become less watchful of those in power.

According to the passage, colonial powers located their capitals:

A) based on political expediency. B) to promote their trading interests. C) to showcase their power and prestige.
D) where they had the densest populations.

DIRECTIONS for the question: *The four sentences (labelled 1,2,3 and 4) given in this question, when properly sequenced, from a coherent paragraph. Decide on the proper order for the sentence and key in this sequence of four numbers as your answer.*

Question No. : 25

1. Conceptualisations of 'women's time' as contrary to clock-time and clock-time as synonymous with economic rationalism are two of the deleterious results of this representation.
2. While dichotomies of 'men's time', 'women's time', clock-time, and caring time can be analytically useful, this article argues that everyday caring practices incorporate a multiplicity of times; and both men and women can engage in these multiple-times
3. When the everyday practices of working sole fathers and working sole mothers are carefully examined to explore conceptualisations of gendered time, it is found that caring time is often more focused on the clock than generally theorised.
4. Clock-time has been consistently represented in feminist literature as a masculine artefact representative of a 'time is money' perspective

A) 4132 B) C) D)

DIRECTIONS for the question: *The four sentences (labelled 1,2,3 and 4) given in this question, when properly sequenced, from a coherent paragraph. Decide on the proper order for the sentence and key in this sequence of four numbers as your answer.*

Question No. : 26

1. Such a belief in the harmony of nature requires a purpose presumably imposed by the goodness and wisdom of a deity.
2. These parts, all fit together into an integrated, well-ordered system that was created by design.
3. Historically, the notion of a balance of nature is part observational, part metaphysical, and not scientific in any way.
4. It is an example of an ancient belief system called teleology, the notion that what we call nature has a predetermined destiny associated with its component parts.

A) 3421 B) C) D)

DIRECTIONS for the question: *The four sentences (labelled 1,2,3 and 4) given in this question, when properly sequenced, from a coherent paragraph. Decide on the proper order for the sentence and key in this sequence of four numbers as your answer.*

Question No. : 27

1. To the uninitiated listener, atonal music can sound like chaotic, random noise.
2. Atonality is a condition of music in which the constructs of the music do not 'live' within the confines of a particular key signature, scale, or mode.
3. After you realize the amount of knowledge, skill, and technical expertise required to compose or perform it, your tune may change, so to speak.
4. However, atonality is one of the most important movements in 20th century music.

A) 2143 B) C) D)

DIRECTIONS for the question: *Identify the most appropriate summary for the paragraph.*

Question No. : 28

Language is an autapomorphy found only in our lineage, and not shared with other branches of our group such as primates. We also have no definitive evidence that any species other than Homo sapiens ever had language. However, it must be noted straightaway that 'language' is not a monolithic entity, but rather a complex bundle of traits that must have evolved over a significant time frame…. Moreover, language crucially draws on aspects of cognition that are long established in the primate lineage, such as memory: the language faculty as a whole comprises more than just the uniquely linguistic features.

A) Language is not a single, uniform entity but the end result of a long and complex process of linguistic evolution.
B) Language, a derived trait found only in humans, has evolved over time and involves memory.
C) Language is a distinctively human feature as there is no evidence of the existence of language in any other species.
D) Language evolved with linguistic features building on features of cognition such as memory.

DIRECTIONS for the question: *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.*

Question No. : 29

1. Socrates told us that 'the unexamined life is not worth living' and that to 'know thyself' is the path to true wisdom
2. It suggests that you should adopt an ancient rhetorical method favored by the likes of Julius Caesar and known as 'illeism' – or speaking about yourself in the third person.
3. Research has shown that people who are prone to rumination also often suffer from impaired decision making under pressure and are at a substantially increased risk of depression.
4. Simple rumination – the process of churning your concerns around in your head – is not the way to achieve self-realization.
5. The idea is that this small change in perspective can clear your emotional fog, allowing you to see past your biases.

A) 1 B) C) D)

DIRECTIONS for the question: *Identify the most appropriate summary for the paragraph.*

Question No. : 30

Social movement organizations often struggle to mobilize supporters from allied movements in their efforts to achieve critical mass. Organizations with hybrid identities—those whose organizational identities span the boundaries of two or more social movements, issues, or identities—are vital to mobilizing these constituencies. Studies of the post-9/11 U.S. antiwar movement show that individuals with past involvement in non-anti-war movements are more likely to join hybrid organizations than are individuals without involvement in non-anti-war movements. In addition, they show that organizations with hybrid identities occupy relatively more central positions in inter-organizational contact networks within the antiwar movement and thus recruit significantly more participants in demonstrations than do nonhybrid organizations.

A) Movements that work towards social change often find it difficult to mobilize a critical mass of supporters.
B) Hybrid organizations attract individuals that are deeply involved in anti-war movements.
C) Organizations with hybrid identities are able to mobilize individuals with different points of view.
D) Post 9/11 studies show that people who are involved in non anti-war movements are likely to join hybrid organizations.

DIRECTIONS for the question: *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.*

Question No. : 31

1. A particularly interesting example of inference occurs in many single panel comics.
2. It's the creator's participation and imagination that makes the single-panel comic so engaging and so rewarding.
3. Often, the humor requires you to imagine what happened in the instant immediately before or immediately after the panel you're being shown.
4. To get the joke, you actually have to figure out what some of these missing panels must be.
5. It is as though the cartoonist devised a series of panels to tell the story and has chosen to show you only one – and typically not even the funniest.

A) 2 B) C) D)

DIRECTIONS for the question: *The four sentences (labelled 1,2,3 and 4) given in this question, when properly sequenced, from a coherent paragraph. Decide on the proper order for the sentence and key in this sequence of four numbers as your answer.*

Question No. : 32

1. Living things—animals and plants—typically exhibit correlational structure.
2. Adaptive behaviour depends on cognitive economy, treating objects as equivalent.
3. The information we receive from our senses, from the world, typically has structure and order, and is not arbitrary.
4. To categorize an object means to consider it equivalent to other things in that category, and different—along some salient dimension—from things that are not.

A) 2431 B) C) D)

DIRECTIONS for the question: *Identify the most appropriate summary for the paragraph.*

Question No. : 33

Privacy-challenged office workers may find it hard to believe, but open-plan offices and cubicles were invented by architects and designers who thought that to break down the social walls that divide people, you had to break down the real walls, too. Modernist architects saw walls and rooms as downright fascist. The spaciousness and flexibility of an open plan would liberate homeowners and office dwellers from the confines of boxes. But companies took up their idea less out of a democratic ideology than a desire to pack in as many workers as they could. The typical open-plan office of the first half of the 20th century was a white-collar assembly line. Cubicles were interior designers' attempt to put some soul back in.

A) Wall-free office spaces did not quite work out the way their utopian inventors intended, as they became tools for exploitation of labor.
B) Wall-free office spaces could have worked out the way their utopian inventors intended had companies cared for workers' satisfaction.
C) Wall-free office spaces did not quite work out as companies don't believe in democratic ideology.
D) Wall-free office spaces did not quite work out as desired and therefore cubicles came into being.

DIRECTIONS for the question: *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.*

Question No. : 34

1. Ocean plastic is problematic for a number of reasons, but primarily because marine animals eat it.
2. The largest numerical proportion of ocean plastic falls in small size fractions.
3. Aside from clogging up the digestive tracts of marine life, plastic also tends to adsorb pollutants from the water column.
4. Plastic in the oceans is arguably one of the most important and pervasive environmental problems today.
5. Eating plastic has a number of negative consequences such as the retention of plastic particles in the gut for longer periods than normal food particles.

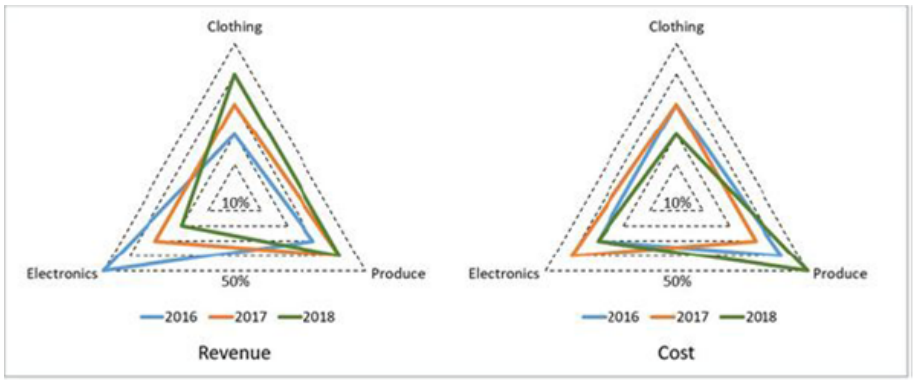
A) 2 B) C) D)

Section : DI & Reasoning

DIRECTIONS for the question: *Analyse the graph/s given below and answer the question that follows.*

Question No. : 35

A large store has only three departments, Clothing, Produce, and Electronics. The following figure shows the percentages of revenue and cost from the three departments for the years 2016, 2017 and 2018. The dotted lines depict percentage levels. So for example, in 2016, 50% of store's revenue came from its Electronics department while 40% of its costs were incurred in the Produce department.



In this setup, Profit is computed as (Revenue – Cost) and Percentage Profit as Profit/Cost × 100%.

It is known that

1. The percentage profit for the store in 2016 was 100%.
2. The store's revenue doubled from 2016 to 2017, and its cost doubled from 2016 to 2018.
3. There was no profit from the Electronics department in 2017.
4. In 2018, the revenue from the Clothing department was the same as the cost incurred in the Produce department.

What was the percentage profit of the store in 2018? (type in box)

A) 25 B) C) D)

DIRECTIONS for the question: *Analyse the graph/s given below and answer the question that follows.*

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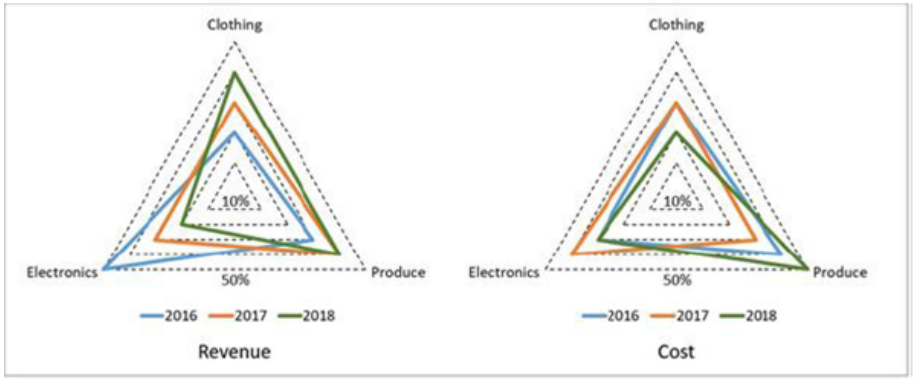

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2. The store's revenue doubled from 2016 to 2017, and its cost doubled from 2016 to 2018.
3. There was no profit from the Electronics department in 2017.
4. In 2018, the revenue from the Clothing department was the same as the cost incurred in the Produce department.

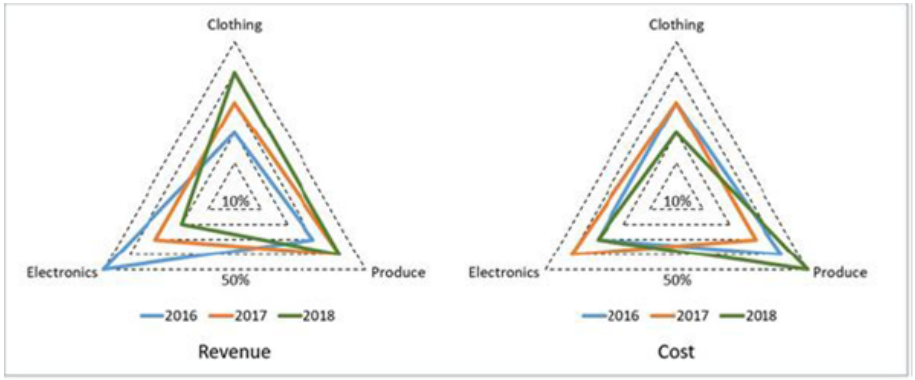
What was the ratio of revenue generated from the Produce department in 2017 to that in 2018?

A) 4 : 3 B) 9 : 16 C) 8 : 5 D) 16 : 9

DIRECTIONS for the question: *Analyse the graph/s given below and answer the question that follows.*

Question No. : 37

A large store has only three departments, Clothing, Produce, and Electronics. The following figure shows the percentages of revenue and cost from the three departments for the years 2016, 2017 and 2018. The dotted lines depict percentage levels. So for example, in 2016, 50% of store's revenue came from its Electronics department while 40% of its costs were incurred in the Produce department.



In this setup, Profit is computed as (Revenue – Cost) and Percentage Profit as Profit/Cost × 100%.

It is known that

1. The percentage profit for the store in 2016 was 100%.
2. The store's revenue doubled from 2016 to 2017, and its cost doubled from 2016 to 2018.
3. There was no profit from the Electronics department in 2017.
4. In 2018, the revenue from the Clothing department was the same as the cost incurred in the Produce department.

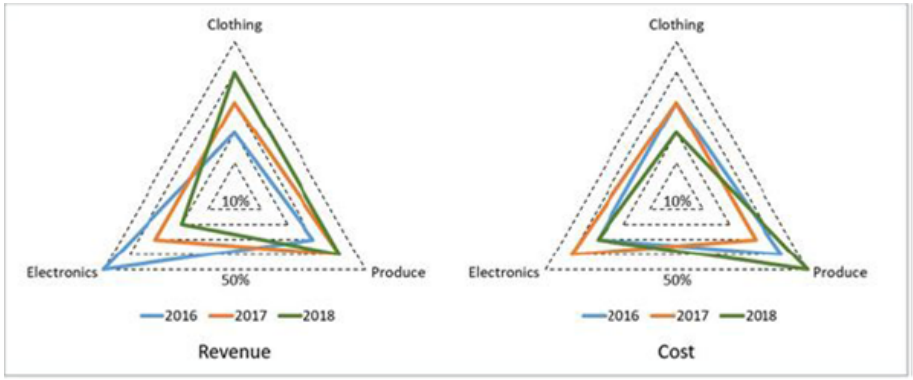
What percentage of the total profits for the store in 2016 was from the Electronics department? (type in box)

A) 70 B) C) D)

DIRECTIONS for the question: *Analyse the graph/s given below and answer the question that follows.*

Question No. : 38

A large store has only three departments, Clothing, Produce, and Electronics. The following figure shows the percentages of revenue and cost from the three departments for the years 2016, 2017 and 2018. The dotted lines depict percentage levels. So for example, in 2016, 50% of store's revenue came from its Electronics department while 40% of its costs were incurred in the Produce department.



In this setup, Profit is computed as (Revenue – Cost) and Percentage Profit as Profit/Cost × 100%.

It is known that

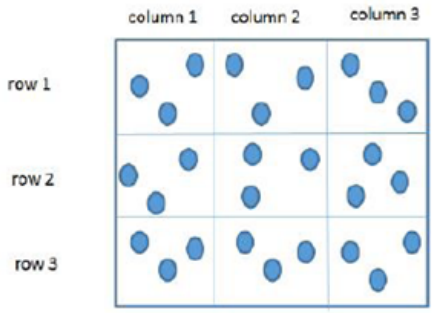
1. The percentage profit for the store in 2016 was 100%.
2. The store's revenue doubled from 2016 to 2017, and its cost doubled from 2016 to 2018.
3. There was no profit from the Electronics department in 2017.
4. In 2018, the revenue from the Clothing department was the same as the cost incurred in the Produce department.

What was the approximate difference in profit percentages of the store in 2017 and 2018?

A) 8.3 B) 15.5 C) 25.0 D) 33.3

DIRECTIONS for the question: *Go through the graph and the information given below and answer the question that follows.*

Question No. : 39



	Column 1	**Column 2**	**Column 3**
Row 1	(2, 4)	(6, 8)	(1, 3)
Row 2	(3, 5)	(1, 1)	(6, 20)
Row 3	(1, 2)	(1, 2)	(2, 5)

Three pouches (each represented by a filled circle) are kept in each of the nine slots in a 3 × 3 grid, as shown in the figure. Every pouch has a certain number of one-rupee coins. The minimum and maximum amounts of money (in rupees) among the three pouches in each of the nine slots are given in the table. For example, we know that among the three pouches kept in the second column of the first row, the minimum amount in a pouch is Rs. 6 and the maximum amount is Rs. 8.

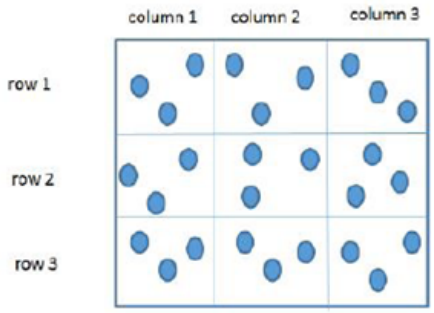
There are nine pouches in any of the three columns, as well as in any of the three rows. It is known that the average amount of money (in rupees) kept in the nine pouches in any column or in any row is an integer. It is also known that the total amount of money kept in the three pouches in the first column of the third row is Rs. 4.

What is the total amount of money (in rupees) in the three pouches kept in the first column of the second row? (type in box)

A) 13 B) C) D)

DIRECTIONS for the question: *Go through the graph and the information given below and answer the question that follows.*

Question No. : 40



	Column 1	Column 2	Column 3
Row 1	(2, 4)	(6, 8)	(1, 3)
Row 2	(3, 5)	(1, 1)	(6, 20)
Row 3	(1, 2)	(1, 2)	(2, 5)

Three pouches (each represented by a filled circle) are kept in each of the nine slots in a 3 × 3 grid, as shown in the figure. Every pouch has a certain number of one-rupee coins. The minimum and maximum amounts of money (in rupees) among the three pouches in each of the nine slots are given in the table. For example, we know that among the three pouches kept in the second column of the first row, the minimum amount in a pouch is Rs. 6 and the maximum amount is Rs. 8.

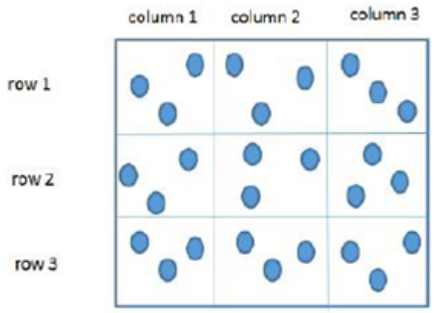
There are nine pouches in any of the three columns, as well as in any of the three rows. It is known that the average amount of money (in rupees) kept in the nine pouches in any column or in any row is an integer. It is also known that the total amount of money kept in the three pouches in the first column of the third row is Rs. 4.

How many pouches contain exactly one coin? (type in box)

A) 8 B) C) D)

DIRECTIONS for the question: *Go through the graph and the information given below and answer the question that follows.*

Question No. : 41



	Column 1	**Column 2**	**Column 3**
Row 1	(2, 4)	(6, 8)	(1, 3)
Row 2	(3, 5)	(1, 1)	(6, 20)
Row 3	(1, 2)	(1, 2)	(2, 5)

Three pouches (each represented by a filled circle) are kept in each of the nine slots in a 3 × 3 grid, as shown in the figure. Every pouch has a certain number of one-rupee coins. The minimum and maximum amounts of money (in rupees) among the three pouches in each of the nine slots are given in the table. For example, we know that among the three pouches kept in the second column of the first row, the minimum amount in a pouch is Rs. 6 and the maximum amount is Rs. 8.

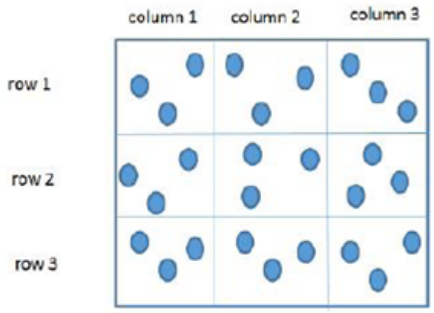
There are nine pouches in any of the three columns, as well as in any of the three rows. It is known that the average amount of money (in rupees) kept in the nine pouches in any column or in any row is an integer. It is also known that the total amount of money kept in the three pouches in the first column of the third row is Rs. 4.

What is the number of slots for which the average amount (in rupees) of its three pouches is an integer? (type in box)

A) 2 B) C) D)

DIRECTIONS for the question: *Go through the graph and the information given below and answer the question that follows.*

Question No. : 42



	Column 1	Column 2	Column 3
Row 1	(2, 4)	(6, 8)	(1, 3)
Row 2	(3, 5)	(1, 1)	(6, 20)
Row 3	(1, 2)	(1, 2)	(2, 5)

Three pouches (each represented by a filled circle) are kept in each of the nine slots in a 3 × 3 grid, as shown in the figure. Every pouch has a certain number of one-rupee coins. The minimum and maximum amounts of money (in rupees) among the three pouches in each of the nine slots are given in the table. For example, we know that among the three pouches kept in the second column of the first row, the minimum amount in a pouch is Rs. 6 and the maximum amount is Rs. 8.

There are nine pouches in any of the three columns, as well as in any of the three rows. It is known that the average amount of money (in rupees) kept in the nine pouches in any column or in any row is an integer. It is also known that the total amount of money kept in the three pouches in the first column of the third row is Rs. 4.

The number of slots for which the total amount in its three pouches strictly exceeds Rs. 10 is (type in box)

A) 3 B) C) D)

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 43

Students in a college are discussing two proposals –

A: a proposal by the authorities to introduce dress code on campus, and
B: a proposal by the students to allow multinational food franchises to set up outlets on college campus.
A student does not necessarily support either of the two proposals.

In an upcoming election for student union president, there are two candidates in fray: Sunita and Ragini. Every student prefers one of the two candidates.
A survey was conducted among the students by picking a sample of 500 students. The following information was noted from this survey.

1. 250 students supported proposal A and 250 students supported proposal B.
2. Among the 200 students who preferred Sunita as student union president, 80% supported proposal A.
3. Among those who preferred Ragini, 30% supported proposal A.
4. 20% of those who supported proposal B preferred Sunita.
5. 40% of those who did not support proposal B preferred Ragini.
6. Every student who preferred Sunita and supported proposal B also supported proposal A.
7. Among those who preferred Ragini, 20% did not support any of the proposals.

Among the students surveyed who supported proposal A, what percentage preferred Sunita for student union president? (type in box)

A) 64 B) C) D)

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 44

Students in a college are discussing two proposals –

A: a proposal by the authorities to introduce dress code on campus, and
B: a proposal by the students to allow multinational food franchises to set up outlets on college campus.
A student does not necessarily support either of the two proposals.

In an upcoming election for student union president, there are two candidates in fray: Sunita and Ragini. Every student prefers one of the two candidates.
A survey was conducted among the students by picking a sample of 500 students. The following information was noted from this survey.

1. 250 students supported proposal A and 250 students supported proposal B.
2. Among the 200 students who preferred Sunita as student union president, 80% supported proposal A.
3. Among those who preferred Ragini, 30% supported proposal A.
4. 20% of those who supported proposal B preferred Sunita.
5. 40% of those who did not support proposal B preferred Ragini.
6. Every student who preferred Sunita and supported proposal B also supported proposal A.
7. Among those who preferred Ragini, 20% did not support any of the proposals.

What percentage of the students surveyed who did not support proposal A preferred Ragini as student union president? (type in box)

A) 84 B) C) D)

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 45

Students in a college are discussing two proposals –

A: a proposal by the authorities to introduce dress code on campus, and
B: a proposal by the students to allow multinational food franchises to set up outlets on college campus.
A student does not necessarily support either of the two proposals.

In an upcoming election for student union president, there are two candidates in fray: Sunita and Ragini. Every student prefers one of the two candidates.
A survey was conducted among the students by picking a sample of 500 students. The following information was noted from this survey.

1. 250 students supported proposal A and 250 students supported proposal B.
2. Among the 200 students who preferred Sunita as student union president, 80% supported proposal A.
3. Among those who preferred Ragini, 30% supported proposal A.
4. 20% of those who supported proposal B preferred Sunita.
5. 40% of those who did not support proposal B preferred Ragini.
6. Every student who preferred Sunita and supported proposal B also supported proposal A.
7. Among those who preferred Ragini, 20% did not support any of the proposals.

What percentage of the students surveyed who supported both proposals A and B preferred Sunita as student union president?

A) 25 B) 50 C) 20 D) 40

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 46

Students in a college are discussing two proposals –

A: a proposal by the authorities to introduce dress code on campus, and
B: a proposal by the students to allow multinational food franchises to set up outlets on college campus.
A student does not necessarily support either of the two proposals.

In an upcoming election for student union president, there are two candidates in fray: Sunita and Ragini. Every student prefers one of the two candidates.
A survey was conducted among the students by picking a sample of 500 students. The following information was noted from this survey.

1. 250 students supported proposal A and 250 students supported proposal B.
2. Among the 200 students who preferred Sunita as student union president, 80% supported proposal A.
3. Among those who preferred Ragini, 30% supported proposal A.
4. 20% of those who supported proposal B preferred Sunita.
5. 40% of those who did not support proposal B preferred Ragini.
6. Every student who preferred Sunita and supported proposal B also supported proposal A.
7. Among those who preferred Ragini, 20% did not support any of the proposals.

How many of the students surveyed supported proposal B, did not support proposal A and preferred Ragini as student union president?

A) 150 B) 210 C) 200 D) 40

DIRECTIONS for the question: *Read the information given below and answer the question that follows.*

Question No. : 47

In the table below the check marks indicate all languages spoken by five people: Paula, Quentin, Robert, Sally and Terence. For example, Paula speaks only Chinese and English.

	Arabic	Basque	Chinese	Dutch	English	French
Paula			√		√	
Quentin				√	√	
Robert	√					√
Sally		√			√	
Terence			√			√

These five people form three teams, Team 1, Team 2 and Team 3. Each team has either 2 or 3 members. A team is said to speak a particular language if at least one of its members speak that language.

The following facts are known.
(1) Each team speaks exactly four languages and has the same number of members.
(2) English and Chinese are spoken by all three teams, Basque and French by exactly two teams and the other languages by exactly one team.
(3) None of the teams include both Quentin and Robert.
(4) Paula and Sally are together in exactly two teams.
(5) Robert is in Team 1 and Quentin is in Team 3.

Who among the following four is not a member of Team 2?

A) Sally B) Terence C) Paula D) Quentin

DIRECTIONS for the question: *Read the information given below and answer the question that follows.*

Question No. : 48

In the table below the check marks indicate all languages spoken by five people: Paula, Quentin, Robert, Sally and Terence. For example, Paula speaks only Chinese and English.

	Arabic	Basque	Chinese	Dutch	English	French
Paula			√		√	
Quentin				√	√	
Robert	√					√
Sally		√			√	
Terence			√			√

These five people form three teams, Team 1, Team 2 and Team 3. Each team has either 2 or 3 members. A team is said to speak a particular language if at least one of its members speak that language.

The following facts are known.
(1) Each team speaks exactly four languages and has the same number of members.
(2) English and Chinese are spoken by all three teams, Basque and French by exactly two teams and the other languages by exactly one team.
(3) None of the teams include both Quentin and Robert.
(4) Paula and Sally are together in exactly two teams.
(5) Robert is in Team 1 and Quentin is in Team 3.

Who among the following four people is a part of exactly two teams?

A) Quentin B) Robert C) Paula D) Sally

DIRECTIONS for the question: *Read the information given below and answer the question that follows.*

Question No. : 49

In the table below the check marks indicate all languages spoken by five people: Paula, Quentin, Robert, Sally and Terence. For example, Paula speaks only Chinese and English.

	Arabic	Basque	Chinese	Dutch	English	French
Paula			√		√	
Quentin				√	√	
Robert	√					√
Sally		√			√	
Terence			√			√

These five people form three teams, Team 1, Team 2 and Team 3. Each team has either 2 or 3 members. A team is said to speak a particular language if at least one of its members speak that language.

The following facts are known.
(1) Each team speaks exactly four languages and has the same number of members.
(2) English and Chinese are spoken by all three teams, Basque and French by exactly two teams and the other languages by exactly one team.
(3) None of the teams include both Quentin and Robert.
(4) Paula and Sally are together in exactly two teams.
(5) Robert is in Team 1 and Quentin is in Team 3.

Who among the five people is a member of all teams?

A) Paula B) No one C) Sally D) Terence

DIRECTIONS for the question: *Read the information given below and answer the question that follows.*

Question No. : 50

In the table below the check marks indicate all languages spoken by five people: Paula, Quentin, Robert, Sally and Terence. For example, Paula speaks only Chinese and English.

	Arabic	Basque	Chinese	Dutch	English	French
Paula			√		√	
Quentin				√	√	
Robert	√					√
Sally		√			√	
Terence			√			√

These five people form three teams, Team 1, Team 2 and Team 3. Each team has either 2 or 3 members. A team is said to speak a particular language if at least one of its members speak that language.

The following facts are known.
(1) Each team speaks exactly four languages and has the same number of members.
(2) English and Chinese are spoken by all three teams, Basque and French by exactly two teams and the other languages by exactly one team.
(3) None of the teams include both Quentin and Robert.
(4) Paula and Sally are together in exactly two teams.
(5) Robert is in Team 1 and Quentin is in Team 3.

Apart from Chinese and English, which languages are spoken by Team 1?

A) Basque and Dutch B) Arabic and French C) Basque and French D) Arabic and Basque

DIRECTIONS for the question: *Read the information given below and answer the question that follows.*

Question No. : 51

Three doctors, Dr. Ben, Dr. Kane and Dr. Wayne visit a particular clinic Monday to Saturday to see patients. Dr. Ben sees each patient for 10 minutes and charges Rs. 100/-. Dr. Kane sees each patient for 15 minutes and charges Rs. 200/-, while Dr. Wayne sees each patient for 25 minutes and charges Rs. 300/-.

The clinic has three rooms numbered 1, 2 and 3 which are assigned to the three doctors as per the following table.

Room No.	Monday & Tuesday	Wednesday & Thursday	Friday & Saturday
1	Ben	Wayne	Kane
2	Kane	Ben	Wayne
3	Wayne	Kane	Ben

The clinic is open from 9 a.m. to 11.30 a.m. every Monday to Saturday.

On arrival each patient is handed a numbered token indicating their position in the queue, starting with token number 1 every day. As soon as any doctor becomes free, the next patient in the queue enters that emptied room for consultation. If at any time, more than one room is free then the waiting patient enters the room with the smallest number. For example, if the next two patients in the queue have token numbers 7 and 8 and if rooms numbered 1 and 3 are free, then patient with token number 7 enters room number 1 and patient with token number 8 enters room number 3.

What is the maximum number of patients that the clinic can cater to on any single day?

A) 30 B) 12 C) 15 D) 31

DIRECTIONS for the question: *Read the information given below and answer the question that follows.*

Question No. : 52

Three doctors, Dr. Ben, Dr. Kane and Dr. Wayne visit a particular clinic Monday to Saturday to see patients. Dr. Ben sees each patient for 10 minutes and charges Rs. 100/-. Dr. Kane sees each patient for 15 minutes and charges Rs. 200/-, while Dr. Wayne sees each patient for 25 minutes and charges Rs. 300/-.

The clinic has three rooms numbered 1, 2 and 3 which are assigned to the three doctors as per the following table.

Room No.	Monday & Tuesday	Wednesday & Thursday	Friday & Saturday
1	Ben	Wayne	Kane
2	Kane	Ben	Wayne
3	Wayne	Kane	Ben

The clinic is open from 9 a.m. to 11.30 a.m. every Monday to Saturday.

On arrival each patient is handed a numbered token indicating their position in the queue, starting with token number 1 every day. As soon as any doctor becomes free, the next patient in the queue enters that emptied room for consultation. If at any time, more than one room is free then the waiting patient enters the room with the smallest number. For example, if the next two patients in the queue have token numbers 7 and 8 and if rooms numbered 1 and 3 are free, then patient with token number 7 enters room number 1 and patient with token number 8 enters room number 3.

The queue is never empty on one particular Saturday. Which of the three doctors would earn the maximum amount in consultation charges on that day?

A) Dr. Ben B) Dr. Wayne C) Both Dr. Wayne and Dr. Kane D) Dr. Kane

DIRECTIONS for the question: *Read the information given below and answer the question that follows.*

Question No. : 53

Three doctors, Dr. Ben, Dr. Kane and Dr. Wayne visit a particular clinic Monday to Saturday to see patients. Dr. Ben sees each patient for 10 minutes and charges Rs. 100/-. Dr. Kane sees each patient for 15 minutes and charges Rs. 200/-, while Dr. Wayne sees each patient for 25 minutes and charges Rs. 300/-.

The clinic has three rooms numbered 1, 2 and 3 which are assigned to the three doctors as per the following table.

Room No.	Monday & Tuesday	Wednesday & Thursday	Friday & Saturday
1	Ben	Wayne	Kane
2	Kane	Ben	Wayne
3	Wayne	Kane	Ben

The clinic is open from 9 a.m. to 11.30 a.m. every Monday to Saturday.

On arrival each patient is handed a numbered token indicating their position in the queue, starting with token number 1 every day. As soon as any doctor becomes free, the next patient in the queue enters that emptied room for consultation. If at any time, more than one room is free then the waiting patient enters the room with the smallest number. For example, if the next two patients in the queue have token numbers 7 and 8 and if rooms numbered 1 and 3 are free, then patient with token number 7 enters room number 1 and patient with token number 8 enters room number 3.

Mr. Singh visited the clinic on Monday, Wednesday, and Friday of a particular week, arriving at 8:50 a.m. on each of the three days. His token number was 13 on all three days. On which day was he at the clinic for the maximum duration?

A) Monday B) Wednesday C) Same duration on all three days D) Friday

DIRECTIONS for the question: *Read the information given below and answer the question that follows.*

Question No. : 54

Three doctors, Dr. Ben, Dr. Kane and Dr. Wayne visit a particular clinic Monday to Saturday to see patients. Dr. Ben sees each patient for 10 minutes and charges Rs. 100/-. Dr. Kane sees each patient for 15 minutes and charges Rs. 200/-, while Dr. Wayne sees each patient for 25 minutes and charges Rs. 300/-.

The clinic has three rooms numbered 1, 2 and 3 which are assigned to the three doctors as per the following table.

Room No.	Monday & Tuesday	Wednesday & Thursday	Friday & Saturday
1	Ben	Wayne	Kane
2	Kane	Ben	Wayne
3	Wayne	Kane	Ben

The clinic is open from 9 a.m. to 11.30 a.m. every Monday to Saturday.

On arrival each patient is handed a numbered token indicating their position in the queue, starting with token number 1 every day. As soon as any doctor becomes free, the next patient in the queue enters that emptied room for consultation. If at any time, more than one room is free then the waiting patient enters the room with the smallest number. For example, if the next two patients in the queue have token numbers 7 and 8 and if rooms numbered 1 and 3 are free, then patient with token number 7 enters room number 1 and patient with token number 8 enters room number 3.

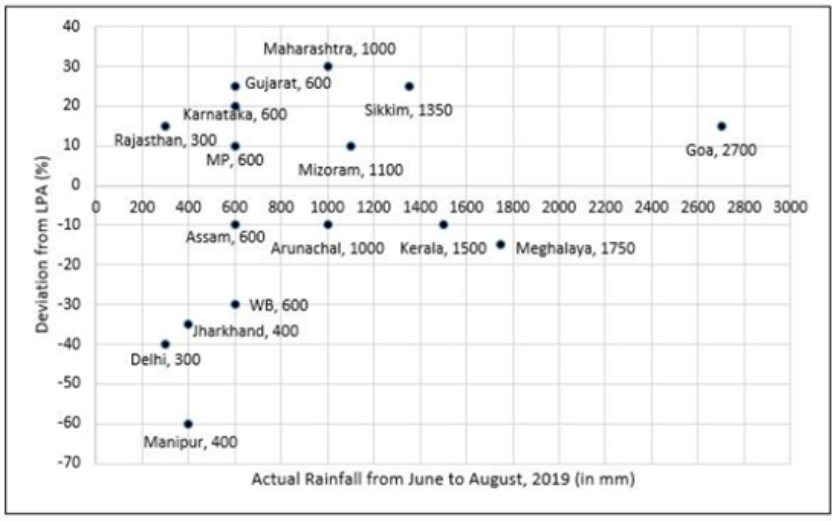
On a slow Thursday, only two patients are waiting at 9 a.m. After that two patients keep arriving at exact 15 minute intervals starting at 9:15 a.m. -- i.e. at 9:15 a.m., 9:30 a.m., 9:45 a.m. etc. Then the total duration in minutes when all three doctors are simultaneously free is

A) 0 B) 15 C) 10 D) 30

DIRECTIONS for the question: *Analyse the graph/s given below and answer the question that follows.*

Question No. : 55

To compare the rainfall data, India Meteorological Department (IMD) calculated the Long Period Average (LPA) of rainfall during period June-August for each of the 16 states. The figure given below shows the actual rainfall (measured in mm) during June-August, 2019 and the percentage deviations from LPA of respective states in 2018. Each state along with its actual rainfall is presented in the figure.



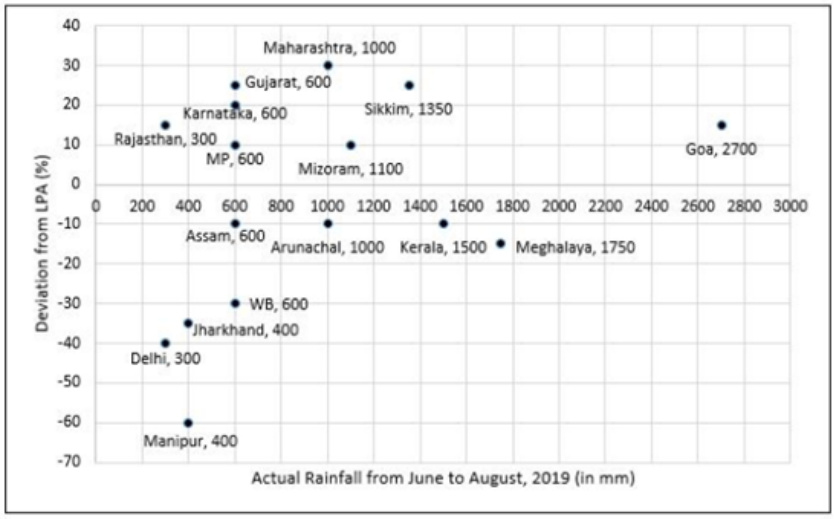
If a 'Heavy Monsoon State' is defined as a state with actual rainfall from June-August, 2019 of 900 mm or more, then approximately what percentage of 'Heavy Monsoon States' have a negative deviation from respective LPAs in 2019?

A) 57.14 B) 14.29 C) 75.00 D) 42.86

DIRECTIONS for the question: *Analyse the graph/s given below and answer the question that follows.*

Question No. : 56

To compare the rainfall data, India Meteorological Department (IMD) calculated the Long Period Average (LPA) of rainfall during period June-August for each of the 16 states. The figure given below shows the actual rainfall (measured in mm) during June-August, 2019 and the percentage deviations from LPA of respective states in 2018. Each state along with its actual rainfall is presented in the figure.



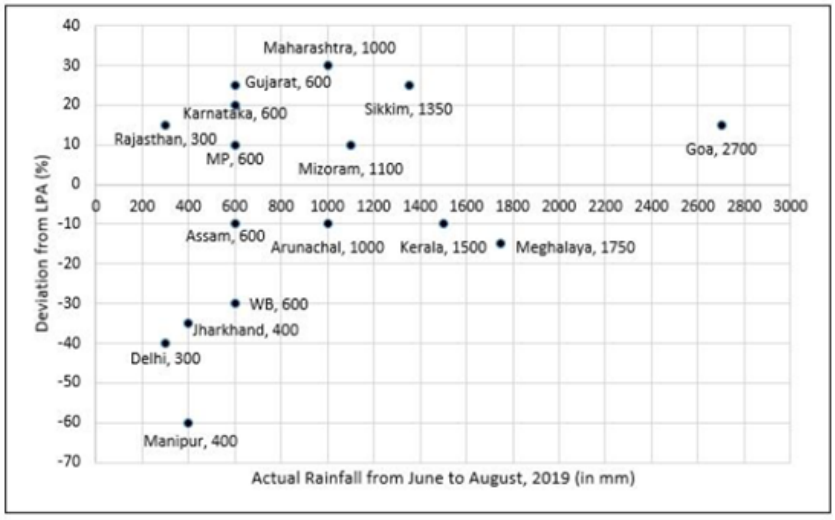
If a 'Low Monsoon State' is defined as a state with actual rainfall from June-August, 2019 of 750 mm or less, then what is the median 'deviation from LPA' (as defined in the Y-axis of the figure) of 'Low Monsoon States'?

A) -30% B) -20% C) 10% D) -10%

DIRECTIONS for the question: *Analyse the graph/s given below and answer the question that follows.*

Question No. : 57

To compare the rainfall data, India Meteorological Department (IMD) calculated the Long Period Average (LPA) of rainfall during period June-August for each of the 16 states. The figure given below shows the actual rainfall (measured in mm) during June-August, 2019 and the percentage deviations from LPA of respective states in 2018. Each state along with its actual rainfall is presented in the figure.



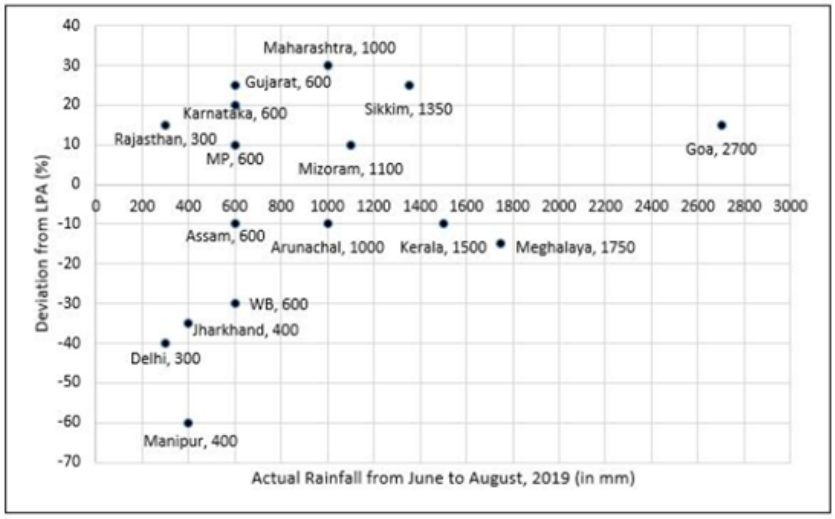
What is the average rainfall of all states that have actual rainfall of 600 mm or less in 2019 and have a negative deviation from LPA?

A) 500 mm B) 460 mm C) 367 mm D) 450 mm

DIRECTIONS for the question: *Analyse the graph/s given below and answer the question that follows.*

Question No. : 58

To compare the rainfall data, India Meteorological Department (IMD) calculated the Long Period Average (LPA) of rainfall during period June-August for each of the 16 states. The figure given below shows the actual rainfall (measured in mm) during June-August, 2019 and the percentage deviations from LPA of respective states in 2018. Each state along with its actual rainfall is presented in the figure.



The LPA of a state for a year is defined as the average rainfall in the preceding 10 years considering the period of June-August. For example, LPA in 2018 is the average rainfall during 2009-2018 and LPA in 2019 is the average rainfall during 2010-2019. It is also observed that the actual rainfall in Gujarat in 2019 is 20% more than the rainfall in 2009. The LPA of Gujarat in 2019 is closest to

A) 490 mm B) 505 mm C) 525 mm D) 475 mm

DIRECTIONS for the question: *Read the information given below and answer the question that follows.*

Question No. : 59

The first year students in a business school are split into six sections. In 2019 the Business Statistics course was taught in these six sections by Annie, Beti, Chetan, Dave, Esha, and Fakir. All six sections had a common midterm (MT) and a common endterm (ET) worth 100 marks each. ET contained more questions than MT. Questions for MT and ET were prepared collectively by the six faculty members. Considering MT and ET together, each faculty member prepared the same number of questions.

Each of MT and ET had at least four questions that were worth 5 marks, at least three questions that were worth 10 marks, and at least two questions that were worth 15 marks. In both MT and ET, all the 5-mark questions preceded the 10-mark questions, and all the 15- mark questions followed the 10-mark questions.

The following additional facts are known.

i. Annie prepared the fifth question for both MT and ET. For MT, this question carried 5 marks.
ii. Annie prepared one question for MT. Every other faculty member prepared more than one questions for MT.
iii. All questions prepared by a faculty member appeared consecutively in MT as well as ET.
iv. Chetan prepared the third question in both MT and ET; and Esha prepared the eighth question in both.
v. Fakir prepared the first question of MT and the last one in ET. Dave prepared the last question of MT and the first one in ET.

The second question in ET was prepared by:

A) Chetan B) Beti C) Dave D) Esha

DIRECTIONS for the question: *Read the information given below and answer the question that follows.*

Question No. : 60

The first year students in a business school are split into six sections. In 2019 the Business Statistics course was taught in these six sections by Annie, Beti, Chetan, Dave, Esha, and Fakir. All six sections had a common midterm (MT) and a common endterm (ET) worth 100 marks each. ET contained more questions than MT. Questions for MT and ET were prepared collectively by the six faculty members. Considering MT and ET together, each faculty member prepared the same number of questions.

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iii. All questions prepared by a faculty member appeared consecutively in MT as well as ET.
iv. Chetan prepared the third question in both MT and ET; and Esha prepared the eighth question in both.
v. Fakir prepared the first question of MT and the last one in ET. Dave prepared the last question of MT and the first one in ET.

How many 5-mark questions were there in MT and ET combined?

A) 13 B) 10 C) Cannot be determined D) 12

DIRECTIONS for the question: *Read the information given below and answer the question that follows.*

Question No. : 61

The first year students in a business school are split into six sections. In 2019 the Business Statistics course was taught in these six sections by Annie, Beti, Chetan, Dave, Esha, and Fakir. All six sections had a common midterm (MT) and a common endterm (ET) worth 100 marks each. ET contained more questions than MT. Questions for MT and ET were prepared collectively by the six faculty members. Considering MT and ET together, each faculty member prepared the same number of questions.

Each of MT and ET had at least four questions that were worth 5 marks, at least three questions that were worth 10 marks, and at least two questions that were worth 15 marks. In both MT and ET, all the 5-mark questions preceded the 10-mark questions, and all the 15- mark questions followed the 10-mark questions.

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ii. Annie prepared one question for MT. Every other faculty member prepared more than one questions for MT.
iii. All questions prepared by a faculty member appeared consecutively in MT as well as ET.
iv. Chetan prepared the third question in both MT and ET; and Esha prepared the eighth question in both.
v. Fakir prepared the first question of MT and the last one in ET. Dave prepared the last question of MT and the first one in ET.

Who prepared 15-mark questions for MT and ET?

A) Only Beti, Dave, Esha and Fakir B) Only Esha and Fakir C) Only Dave, Esha and Fakir D) Only Dave and Fakir

DIRECTIONS for the question: *Read the information given below and answer the question that follows.*

Question No. : 62

The first year students in a business school are split into six sections. In 2019 the Business Statistics course was taught in these six sections by Annie, Beti, Chetan, Dave, Esha, and Fakir. All six sections had a common midterm (MT) and a common endterm (ET) worth 100 marks each. ET contained more questions than MT. Questions for MT and ET were prepared collectively by the six faculty members. Considering MT and ET together, each faculty member prepared the same number of questions.

Each of MT and ET had at least four questions that were worth 5 marks, at least three questions that were worth 10 marks, and at least two questions that were worth 15 marks. In both MT and ET, all the 5-mark questions preceded the 10-mark questions, and all the 15- mark questions followed the 10-mark questions.

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ii. Annie prepared one question for MT. Every other faculty member prepared more than one questions for MT.
iii. All questions prepared by a faculty member appeared consecutively in MT as well as ET.
iv. Chetan prepared the third question in both MT and ET; and Esha prepared the eighth question in both.
v. Fakir prepared the first question of MT and the last one in ET. Dave prepared the last question of MT and the first one in ET.

Which of the following questions did Beti prepare in ET?

A) Fourth question B) Seventh question C) Tenth question D) Ninth question

DIRECTIONS for the question: *Go through the graph and the information given below and answer the question that follows.*

Question No. : 63

Ten players, as listed in the table below, participated in a rifle shooting competition comprising of 10 rounds. Each round had 6 participants. Players numbered 1 through 6 participated in Round 1, players 2 through 7 in Round 2,..., players 5 through 10 in Round 5, players 6 through 10 and 1 in Round 6, players 7 through 10, 1 and 2 in Round 7 and so on.

The top three performances in each round were awarded 7, 3 and 1 points respectively. There were no ties in any of the 10 rounds. The table below gives the total number of points obtained by the 10 players after Round 6 and Round 10.

Player No.	Player Name	Points after Round 6	Points after Round 10
1	Amita	8	18
2	Bala	2	5
3	Chen	3	6
4	David	6	6
5	Eric	3	10
6	Fatima	10	10
7	Gordon	17	17
8	Hansa	1	4
9	Ikea	2	17
10	Joshin	14	17

The following information is known about Rounds 1 through 6:
1. Gordon did not score consecutively in any two rounds.
2. Eric and Fatima both scored in a round.

The following information is known about Rounds 7 through 10:
1. Only two players scored in three consecutive rounds. One of them was Chen. No other player scored in any two consecutive rounds.
2. Joshin scored in Round 7, while Amita scored in Round 10.
3. No player scored in all the four rounds.

What were the scores of Chen, David, and Eric respectively after Round 3?

A) 3, 6, 3 B) 3, 0, 3 C) 3, 3, 3 D) 3, 3, 0

DIRECTIONS for the question: *Go through the graph and the information given below and answer the question that follows.*

Question No. : 64

Ten players, as listed in the table below, participated in a rifle shooting competition comprising of 10 rounds. Each round had 6 participants. Players numbered 1 through 6 participated in Round 1, players 2 through 7 in Round 2,..., players 5 through 10 in Round 5, players 6 through 10 and 1 in Round 6, players 7 through 10, 1 and 2 in Round 7 and so on.

The top three performances in each round were awarded 7, 3 and 1 points respectively. There were no ties in any of the 10 rounds. The table below gives the total number of points obtained by the 10 players after Round 6 and Round 10.

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1. Gordon did not score consecutively in any two rounds.
2. Eric and Fatima both scored in a round.

The following information is known about Rounds 7 through 10:
1. Only two players scored in three consecutive rounds. One of them was Chen. No other player scored in any two consecutive rounds.
2. Joshin scored in Round 7, while Amita scored in Round 10.
3. No player scored in all the four rounds.

Which three players were in the last three positions after Round 4?

A) Bala, Ikea, Joshin B) Bala, Hansa, Ikea C) Hansa, Ikea, Joshin D) Bala, Chen, Gordon

DIRECTIONS for the question: *Go through the graph and the information given below and answer the question that follows.*

Question No. : 65

Ten players, as listed in the table below, participated in a rifle shooting competition comprising of 10 rounds. Each round had 6 participants. Players numbered 1 through 6 participated in Round 1, players 2 through 7 in Round 2,..., players 5 through 10 in Round 5, players 6 through 10 and 1 in Round 6, players 7 through 10, 1 and 2 in Round 7 and so on.

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1. Only two players scored in three consecutive rounds. One of them was Chen. No other player scored in any two consecutive rounds.
2. Joshin scored in Round 7, while Amita scored in Round 10.
3. No player scored in all the four rounds.

Which player scored points in maximum number of rounds?

A) Ikea B) Joshin C) Chen D) Amita

DIRECTIONS for the question: *Go through the graph and the information given below and answer the question that follows.*

Question No. : 66

Ten players, as listed in the table below, participated in a rifle shooting competition comprising of 10 rounds. Each round had 6 participants. Players numbered 1 through 6 participated in Round 1, players 2 through 7 in Round 2,..., players 5 through 10 in Round 5, players 6 through 10 and 1 in Round 6, players 7 through 10, 1 and 2 in Round 7 and so on.

The top three performances in each round were awarded 7, 3 and 1 points respectively. There were no ties in any of the 10 rounds. The table below gives the total number of points obtained by the 10 players after Round 6 and Round 10.

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1. Gordon did not score consecutively in any two rounds.
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1. Only two players scored in three consecutive rounds. One of them was Chen. No other player scored in any two consecutive rounds.
2. Joshin scored in Round 7, while Amita scored in Round 10.
3. No player scored in all the four rounds.

Which players scored points in the last round?

A) Amita, Chen, Eric B) Amita, Chen, David C) Amita, Bala, Chen D) Amita, Eric, Joshin

Section : Quantitative Ability

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 67

The strength of a salt solution is p% if 100 ml of the solution contains p grams of salt. Each of three vessels A, B, C contains 500 ml of salt solution of strengths 10%, 22%, and 32%, respectively. Now, 100 ml of the solution in vessel A is transferred to vessel B. Then, 100 ml of the solution in vessel B is transferred to vessel C. Finally, 100 ml of the solution in vessel C is transferred to vessel A. The strength, in percentage, of the resulting solution in vessel A is

A) 15 B) 13 C) 14 D) 12

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 68

The quadratic equation $x^2 + bx + c = 0$ has two roots 4a and 3a, where a is an integer. Which of the following is a possible value of $b^2 + c$?

A) 3721 B) 549 C) 361 D) 427

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 69

Two ants A and B start from a point P on a circle at the same time, with A moving clock-wise and B moving anti-clockwise. They meet for the first time at 10:00 am when A has covered 60% of the track. If A returns to P at 10:12 am, then B returns to P at

A) 10:25 am B) 10:18 am C) 10:27 am D) 10:45 am

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 70

The base of a regular pyramid is a square and each of the other four sides is an equilateral triangle, length of each side being 20 cm. The vertical height of the pyramid, in cm, is

A) 12 B) $10\sqrt{2}$ C) $8\sqrt{3}$ D) $5\sqrt{5}$

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 71

What is the largest positive integer such that $\frac{n^2+7n+12}{n^2-n-12}$ is also a positive integer?

A) 6 B) 16 C) 12 D) 8

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 72

Let A be a real number. Then the roots of the equation $x^2 - 4x - \log_2 A = 0$ are real and distinct if and only if

A) $A < 1/16$ B) $A < 1/8$ C) $A > 1/16$ D) $A > 1/8$

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 73

Mukesh purchased 10 bicycles in 2017, all at the same price. He sold six of these at a profit of 25% and the remaining four at a loss of 25%. If he made a total profit of Rs. 2000, then his purchase price of a bicycle, in Rupees, was

A) 4000 B) 6000 C) 8000 D) 2000

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 74

The average of 30 integers is 5. Among these 30 integers, there are exactly 20 which do not exceed 5. What is the highest possible value of the average of these 20 integers?

A) 5 B) 3.5 C) 4.5 D) 4

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 75

Let f be a function such that f (mn) = f (m) f (n) for every positive integers m and n. If f (1), f (2) and f (3) are positive integers, f (1) < f (2), and f (24) = 54, then f (18) equals (type in box)

A) 12 B) C) D)

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 76

Let a_1, a_2, ... be integers such that

$a_1 - a_2 + a_3 - a_4 + \ldots + (-1)^{n-1} a_n = n$, for all $n \geq 1$.

Then $a_{51} + a_{52} + \ldots + a_{1023}$ equals

A) -1 B) 1 C) 0 D) 10

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 77

In an examination, Rama's score was one-twelfth of the sum of the scores of Mohan and Anjali. After a review, the score of each of them increased by 6. The revised scores of Anjali, Mohan, and Rama were in the ratio 11:10:3. Then Anjali's score exceeded Rama's score by

A) 32 B) 35 C) 24 D) 26

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 78

A cyclist leaves A at 10 am and reaches B at 11 am. Starting from 10:01 am, every minute a motor cycle leaves A and moves towards B. Forty-five such motor cycles reach B by 11 am. All motor cycles have the same speed. If the cyclist had doubled his speed, how many motor cycles would have reached B by the time the cyclist reached B?

A) 20 B) 23 C) 15 D) 22

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 79

Let ABC be a right-angled triangle with hypotenuse BC of length 20 cm. If AP is perpendicular on BC, then the maximum possible length of AP, in cm, is

A) 10 B) $6\sqrt{2}$ C) 5 D) $8\sqrt{2}$

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 80

In a triangle ABC, medians AD and BE are perpendicular to each other, and have lengths 12 cm and 9 cm, respectively. Then, the area of triangle ABC, in sq cm, is

A) 80 B) 72 C) 78 D) 68

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 81

How many pairs (m, n) of positive integers satisfy the equation $m^2 + 105 = n^2$? (type in box)

A) 4 B) C) D)

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 82

The real root of the equation $2^{6x} + 2^{3x+2} - 21 = 0$ is

A) $\frac{\log_2 7}{3}$ B) $\log_2 27$ C) $\frac{\log_2 3}{3}$ D) $\log_2 9$

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 83

If x is a real number, then $\sqrt{\log_e \frac{4x - x^2}{3}}$ is a real number if and only if

A) $-3 \le x \le 3$ B) $1 \le x \le 2$ C) $-1 \le x \le 3$ D) $1 \le x \le 3$

DIRECTION for the question: *Solve the following question and mark the best possible option.*

Question No. : 84

John gets Rs 57 per hour of regular work and Rs 114 per hour of overtime work. He works altogether 172 hours and his income from overtime hours is 15% of his income from regular hours. Then, for how many hours did he work overtime? (type in box)

A) 12 B) C) D)

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 85

Two circles, each of radius 4 cm, touch externally. Each of these two circles is touched externally by a third circle. If these three circles have a common tangent, then the radius of the third circle, in cm, is

A) $\pi/3$ B) 1 C) $1/\sqrt{2}$ D) $\sqrt{2}$

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 86

If $5^x - 3^y = 13438$ and $5^{x-1} + 3^{y+1} = 9686$, then x + y equals (type in box)

A) 13 B) C) D)

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 87

A man makes complete use of 405 cc of iron, 783 cc of aluminium, and 351 cc of copper to make a number of solid right circular cylinders of each type of metal. These cylinders have the same volume and each of these has radius 3 cm. If the total number of cylinders is to be kept at a minimum, then the total surface area of all these cylinders, in sq cm, is

A) 1044(4 + π) B) 1026(1 + π) C) 8464π D) 928π

DIRECTION for the question: *Solve the following question and mark the best possible option.*

Question No. : 88

In an examination, the score of A was 10% less than that of B, the score of B was 25% more than that of C, and the score of C was 20% less than that of D. If A scored 72, then the score of D was (type in box)

A) 80 B) C) D)

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 89

How many factors of $2^4 \times 3^5 \times 10^4$ are perfect squares which are greater than 1? (type in box)

A) 44 B) C) D)

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 90

John jogs on track A at 6 kmph and Mary jogs on track B at 7.5 kmph. The total length of tracks A and B is 325 metres. While John makes 9 rounds of track A, Mary makes 5 rounds of track B. In how many seconds will Mary make one round of track A? (type in box)

A) 48 B) C) D)

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 91

Let a, b, x, y be real number such that $a^2 + b^2 = 25$, $x^2 + y^2 = 169$, and ax + by = 65. If k = ay – bx, then

A) k = 0 B) $k = \frac{5}{13}$ C) $0 < k \leq \frac{5}{13}$ D) $k > \frac{5}{13}$

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 92

The number of common terms in the two sequences: 15, 19, 23, 27,....., 415 and 14, 19, 24, 29,.....,464 is

A) 19 B) 20 C) 21 D) 18

DIRECTION for the question: *Solve the following question and mark the best possible option.*

Question No. : 93

In 2010, a library contained a total of 11500 books in two categories - fiction and non- fiction. In 2015, the library contained a total of 12760 books in these two categories. During this period, there was 10% increase in the fiction category while there was 12% increase in the non-fiction category. How many fiction books were in the library in 2015?

A) 6600 B) 6160 C) 5500 D) 6000

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 94

In a six-digit number, the sixth, that is, the rightmost, digit is the sum of the first three digits, the fifth digit is the sum of first two digits, the third digit is equal to the first digit, the second digit is twice the first digit and the fourth digit is the sum of fifth and sixth digits. Then, the largest possible value of the fourth digit is (type in box)

A) 7 B) C) D)

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 95

The salaries of Ramesh, Ganesh and Rajesh were in the ratio 6:5:7 in 2010, and in the ratio 3:4:3 in 2015. If Ramesh's salary increased by 25% during 2010-2015, then the percentage increase in Rajesh's salary during this period is closest to

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

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 96

If $(2n + 1) + (2n + 3) + (2n + 5) + ... + (2n + 47) = 5280$, then what is the value of $1 + 2 + 3 + ...+ n$? (type in box)

A) 4851 B) C) D)

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 97

Let A and B be two regular polygons having a and b sides, respectively. If $b = 2a$ and each interior angle of B is 3/2 times each interior angle of A, then each interior angle, in degrees, of a regular polygon with $a + b$ sides is (type in box)

A) 150 B) C) D)

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 98

Anil alone can do a job in 20 days while Sunil alone can do it in 40 days. Anil starts the job, and after 3 days, Sunil joins him. Again, after a few more days, Bimal joins them and they together finish the job. If Bimal has done 10% of the job, then in how many days was the job done?

A) 15 B) 12 C) 13 D) 14

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 99

Amal invests Rs 12000 at 8% interest, compounded annually, and Rs 10000 at 6% interest, compounded semi-annually, both investments being for one year. Bimal invests his money at 7.5% simple interest for one year. If Amal and Bimal get the same amount of interest, then the amount, in Rupees, invested by Bimal is (type in box)

A) 20920 B) C) D)

DIRECTIONS for the question: *Solve the following question and mark the best possible option.*

Question No. : 100

A shopkeeper sells two tables, each procured at cost price p, to Amal and Asim at a profit of 20% and at a loss of 20%, respectively. Amal sells his table to Bimal at a profit of 30%, while Asim sells his table to Barun at a loss of 30%. If the amounts paid by Bimal and Barun are x and y, respectively, then (x −y) / p equals

A) 0.7 B) 1 C) 0.50 D) 1.2

QNo:- 1 ,Correct Answer:- *C*

Explanation:- *option 1 can be inferred from lines* " *For, whatever their sense of the strangeness of the country and the thinness of colonial presence, the British colonial state represented the great conquering discourse of Enlightenment rationalism, entering India precisely at the moment of its greatest unchecked arrogance. As inheritors and representatives of this discourse, which carried everything before it, this colonial state could hardly adopt for long such a self-denying attitude"*
option 2 and 4 can be inferred from "It had restructured everything in Europe—the productive system, the political regimes, the moral and cognitive orders—and would do the same in India, particularly as some empirically inclined theorists of that generation considered the colonies a massive laboratory of utilitarian or other theoretical experiments."

option 3 is true for British Modernity while the question is about British colonialism. Hence option 3 is the correct answer here to the 'except' ques

QNo:- 2 ,Correct Answer:- *D*

Explanation:- *The colonial enterprise was a costly one is incorrect*
The cost of colonial state's eminence was not settled or colonial state was 'unsettled/in doubt' are also not implied
The statement talks about the colonial state could not settle simply for eminence at the cost of its marginality. option 4 captures the essence of the statement

QNo:- 3 ,Correct Answer:- *A*

Explanation:- *The passage start with policy refer lines "British colonial policy . . . went through two policy phases, or at least there were two strategies between which its policies actually oscillated, sometimes to its great advantage" and is followed by enlightenment refer lines*
" For, whatever their sense of the strangeness of the country and the thinness of colonial presence, the British colonial state represented the great conquering discourse of Enlightenment rationalism, entering India precisely at the moment of its greatest unchecked arrogance."

Option 3 is incorrect because of multiple phrases most clear of which is 'arrogance' Enlightenment would have been better

Option 4 is clearly incorrect because of use of word 'arrogant rationality'. The rationality wasn't arrogant rather ".... Enlightenment rationalism, entering India precisely at the moment of its greatest unchecked arrogance"

QNo:- 4 ,Correct Answer:- *A*

Explanation:- *refer to lines*

"Here transformation agendas attack as an external force. This externality is not something that can be casually mentioned and forgotten. It is inscribed on every move, every object, every proposal, every legislative act, each line of causality" and

"Theoretically, because modernity was externally introduced, it is explanatorily unhelpful to apply the logical format of the 'transition process' to this pattern of change"

Option 4 is completely incorrect as endogenous and endogamous are 2 very different things

QNo:- 5 ,Correct Answer:- *D*

Explanation:- *the change in British colonial policy was induced by resistance to modernity in Indian society goes against the passage*
Refer following lines which talk about why modernity was introduced in India "Consequently, the colonial state could not settle simply for eminence at the cost of its marginality; it began to take initiatives to introduce the logic of modernity into Indian society."
There was resistance to modernity undoubtedly but that resistance induced change in british colonial policy is incorrect.

Option 1 is in consonance with following lines from para2 "historians have forcefully argued that what it was to replace was not like feudalism"

Option 2 is in consonance with last line of passage "What happened was the creation of a degenerate version of capitalism —what early dependency theorists called the 'development of underdevelopment'."

Option 3 can be inferred from following lines of para 1 "considered the colonies a massive laboratory of utilitarian or other theoretical experiments."

QNo:- 6 ,Correct Answer:- *A*

Explanation:-
The main idea that the author expressed over here is that Language is sufficient to bridge cultural barriers. Hence option A is the correct option which states a conflicting point with the main point as discussed by author in the passage. Or we can say this would be the major point by the author's crtitics.

Nothing has been mentioned about linguistic politics so option B is out of the context.

Option C can be inferred from the passage and hence is in consonance with the main idea of the author. Refer to the line" An individual who wrestles with a difficult language can learn to be more ...."

Option D is also irrelevant as author wasn't an Egyptian, so critics gain nothing from this specific point. Refer lines
"I had also experienced Egypt and Arabic as an outsider."
"What exactly is the dynamic when a man from Missouri ....?"

QNo:- 7 ,Correct Answer:- *D*

Explanation:- *Option A is incorrect as nothing has been mentioned thrroughout the passage about hiring translator rather it is going against the viewpoint of the author. Refer lines "An individual who wrestles with a difficult language can learn to be more sympathetic to outsiders and open to different experiences of the world. This learning process—the embarrassments, the frustrations, the gradual sense of understanding and connection—is invariably transformative."*

option B and C are incorrect. Refering to the 3rd para in para 4 "If all of us now stand beside the same river, speaking in ways we all understand, who's looking east and who's looking west? "
in para 3 " And both the Chinese and the Egyptians welcomed me because I spoke their languages. My identity as a white male was far less important than my ability to communicate."

Option D is the correct option .Refer to the points he mentioned about the chinese dealers as well as his own real experiences with the chinese and Egyptian people. Refer lines
in para 4 "If all of us now stand beside the same river, speaking in ways we all understand, who's looking east and who's looking west? "
in para 3 " And both the Chinese and the Egyptians welcomed me because I spoke their languages. My identity as a white male was far less important than my ability to communicate."
"An individual who wrestles with a difficult language can learn to be more sympathetic to outsiders and open to different experiences of the world. This learning process—the embarrassments, the frustrations, the gradual sense of understanding and connection—is invariably transformative."

QNo:- 8 ,Correct Answer:- *C*

Explanation:- *Option C talks only about language and unlike other options, doesn't talk about people or impact of language on people. hence the correct option here*

Option A can be inferred from the line"after all you can always learn....".so this option is incorrect.
Option B can be inferred from the line "you are what you speak....your gender". So this option is incorrect.
Option D can be inferred from the line" This learning process—the embarrassments, the frustrations, the gradual sense of understanding and connection—is invariably transformative."
Only option C cannot be inferred from the given passage as author has not mentioned anything about the inherent ability of language to evolve over time to change a person hence,this is the right answer.

QNo:- 9 ,Correct Answer:- *D*

Explanation:- *Referring to the last and penultimate paragraph it is clear that the author is of the opinion that learning new languages actually bridges the gap between different cultures. Refer lines "".*
in para 4 "If all of us now stand beside the same river, speaking in ways we all understand, who's looking east and who's looking west? "
in para 3 " And both the Chinese and the Egyptians welcomed me because I spoke their languages. My identity as a white male was far less important than my ability to communicate."
So,option D is the right option.

Moreover, nothing has been mentioned about goodwill or Orientalism has disappeared

Option 3 is incorrect by virtue of being too generic. Author talks mainly from POV of language.

QNo:- 10 ,Correct Answer:- *C*

Explanation:- *All the given options are valid arguments to be used by companies that digitally scan cultural sites except 'It allows a large corporation to project itself as a protector of culture'. This option shows arrogant and supercilious behavior of the corporation claiming to be* ***protector*** *of culture. One can only be the* ***promoter*** *of culture.*
So it is the least likely argument to be used by corporations involved in the digital scanning of cultural sites.

QNo:- 11 ,Correct Answer:- *C*

Explanation:- *The term 'digital colonialism' finds mention in the opening lines of the passage and how critics of the CyArk–Google project describe it is given in the line,'There's another issue for some archaeologists and art historians. CyArk owns the copyrights of the scans — not the countries where these sites are located. That means the countries need CyArk's permission to use these images for commercial purposes'. It clearly means that countries where the scanned sites are located do not own the scan copyrights.*
Options 2 and 4 do not find mention in the passage hence eliminated.
Option 1 is ambiguous wrt which details aren't shared. Undoubtedly, countries don't own copyrights but wrt details refer following lines of last para and para 4 respectively
"The company says it works closely with authorities during the process, even training local people to help. "
"[These] scans . . . are on Google's Arts & Culture site. The digital renditions allow viewers to virtually wander the halls of the temple, look up-close at paintings and turn the building over, to look up at its chambers. [Google Arts & Culture] works with museums and other nonprofits to put high-quality images online."

QNo:- 12 ,Correct Answer:- *B*

Explanation:- *Refer to the lines,'Watrall says this project is just a way for Google to promote Google. "They want to make this material accessible so people will browse it and be filled with wonder by it," he says. "But at its core, it's all about advertisements and driving traffic." Watrall says these images belong on the site of a museum or educational institution, where there is serious scholarship and a very different mission. . . .'*
This gives us an idea that Watrall doesn't has any objection if the digitally scanned pictures belong on the site of a museum or educational institution and his opinion gets invalidated if the option ***CyArk uploads its scanned images of archaeological sites onto museum websites*** *stands true.*
Just taking down advertisements by Google to promote itself would not invalidate Watrall's claim.
Any ban on CyArk scanning archeological sites located in other countries would certainly not prevent promotion by Google.
CyArk does not own the copyright on scanned images of archaeological sites would not prevent using it for commercial purposes.

QNo:- 13 ,Correct Answer:- *A*

Explanation:- *Refer line in the last paragraph,'it's the latest example of a Western nation appropriating a foreign culture, a centuries-long battle'. This line clearly helps us to understand that Erin Thompson blames CyArk of misappropriating foreign culture.*
Seizing means to snatch or to have or to receive possession of something
So Dr. Thompson's view of CyArk owning the copyright of its digital scans of archaeological sites is akin to only one option i.e. the seizing of ancient Egyptian artefacts by a Western museum.

Illegal downloading of content from the internet does not make one the owner of it.
Digital platforms capturing users' data for market research is not bringing the relationship asked.
Tourists uploading photos of monuments onto social media is not same as being the owner of it.

QNo:- 14 ,Correct Answer:- *D*

Explanation:- *By reading views of Ethan Watrall in the passage*
"Ethan Watrall, an archaeologist, professor at Michigan State University and a member of the Society for American Archaeology, says ***he's not comfortable with the arrangement between CyArk and Google****. Watrall says this project is just a way for Google to promote Google. "They want to make this material accessible so people will browse it and be filled with wonder by it," he says. "But at its core, it's all about advertisements and driving traffic." Watrall says these images belong on the site of a museum or educational institution, where there is serious scholarship and a very different mission. . . ."*
Option 4 Critical about the links between a non-profit (alluding to CyArk) and a commercial tech platform(alluding to Google) for distributing archaeological images properly characterise the views of Watrall mentioned in the passage.

Option 1 Though Google's traffic would increase as a result of this project but it is nowhere mentioned that both Google and CyArk are using the images as a marketing tool hence rejected.

option 2 Dismissive of laypeople's access to specialist images of archaeological and cultural sites is not mentioned.

Option 3 Watrall is against the intention and not technology itself, so opposed to the use of digital technology in archaeological and cultural sites in developing countries is eliminated.

QNo:- 15 ,Correct Answer:- *A*

Explanation:- *Refer the lines in 2nd paragraph,*
In his 1985 article, Calthorpe made a statement that still jars with most people: "The city is the ***most environmentally benign form of human settlement.*** *Each city dweller consumes less land, less energy, less water, and produces less pollution than his counterpart in settlements of lower densities."*

The term"still jars" means something that is against or what disturbs most of the people.
So the answer option should be one which is opposite to the views of Calthorpe because views of people and Calthorpe do not match and the option is ***people do not consider cities to be eco-friendly places.***

Options 2 and 3 don't talk about environment so rejected.

Another option, option4, which is close is people consider cities to be very crowded and polluted which is half true i.e. only about pollution (nothing about crowded cities) is mentioned, so eliminated.

QNo:- 16 ,Correct Answer:- *B*

Explanation:- *In this question we have to find the odd one i.e. the option which cannot be considered as reason to cities are good places to live in for all .*
Offer employment opportunities is mentioned in the 2nd paragraph, so it can be inferred from the passage and hence rejected.

Help prevent destruction of the environment can be inferred from second last paragraph ([T]he nationally subsidised city of Manaus in northern Brazil "answers the question" of how to stop deforestation) and therefore eliminated.

Contribute to the cultural transformation of residents can be properly inferred from last paragraph and hence eliminated.

It seems that the option ***have suburban areas as well as office areas*** *can also be inferred from last portion of the passage but it is not the reason author mentions to consider cities as good places to live. So it is the right answer.*

QNo:- 17 ,Correct Answer:- *C*

Explanation:- *Refer to the second last paragraph of the passage where the term* ***Manaus*** *has been mentioned .*
From the paragraph lines we understand that Manaus were the community of people involved in deforestation have changed (by stopping deforestation) and prospered by making mobile phones and televisions.
Hence the reason for giving example of Manaus was to ***explain how urban areas help the environment***

To explain where cities source their labour for factories is not mentioned in the passage.

To describe the infrastructure efficiencies of living in a city is the positive aspect of being in a city and not the reason for citing example of Manaus

To promote cities as employment hubs for people is another positive aspect of being in a city and not the reason for citing example of Manaus

QNo:- 18 ,Correct Answer:- *C*

Explanation:- *In this question we have to select the option which will not fit as an adequate reason for squatter cities being environment friendly.*
All the mentioned options would help keep the squatter cities environment friendly(i.e. sorting out garbage, recycling the material and energy efficient transportation) except ***keeping the streets clean*** *which is least related to environment. Also because this would possible mean that somewhere the waste has to be dumped which means a negative impact on the surrounding environment.*

QNo:- 19 ,Correct Answer:- *B*

Explanation:- *It is a critical reasoning based question wherein we have to weaken the author's argument regarding the greenness of the cities.*

The options concerning the increase in the incidence of crime and increase in the cost of utilities would be easily eliminated because the context of argument is greenness and not crime or cost of utilities.

Similarly rapid spread of diseases in slum areas is also eliminated on the ground that the diseases would impact the population i.e. persons residing in those slums; it is nowhere connected to the greenness of the city.

We are left with only one option and it is a valid point that weakens the author's argument regarding the greenness of city because ***increase in the level of carbon-di-oxide and global warming would definitely impact*** *the verdancy in a negative manner.*

QNo:- 20 ,Correct Answer:- *D*

Explanation:- *The first line of the fourth paragraph mentions "long pedigree". The following line talks of how it has already been tried in the past in Britain. So, "is not a new idea and has been tried in the past" is the answer.*

QNo:- 21 ,Correct Answer:- *A*

Explanation:- *The option "high staff losses, as people may not be prepared to move to smaller towns" is referred to as a reason for why relocating government agencies has not always been a success in the last line of the fourth paragraph. Similarly, the option "the difficulty of attracting talented, well-skilled people in more remote areas" is referred to as a reason in the penultimate paragraph in the lines " Pick small, poor towns, and areas of high unemployment get new jobs, but it is hard to attract the most qualified workers".*
And the option " increased avenues of corruption away from the capital city" is referred to as a reason in the last paragraph.
The option " a rise in pollution levels and congestion in the new locations" is not mentioned anywhere and hence is the answer

QNo:- 22 ,Correct Answer:- *A*

Explanation:- *The penultimate paragraph*
*"The dilemma is obvious. **Pick** small, poor towns, and areas of high unemployment get new jobs, but it is hard to attract the most qualified workers; **opt for larger cities** with infrastructure and better-qualified residents, and the country's most deprived areas see little benefit. . . ."*
helps us identify " relocating government agencies to boost growth in remote areas with poor amenities or to relatively larger cities with good amenities." as the answer.
*Option 4 "**keeping** government agencies in the **largest** city with good infrastructure **or moving them** to a remote area with few amenities." is incorrect as penultimate para talks about which ones to relocate to. **Keeping** govt agencies in largest city isn't one of the 2 options discussed in the para*

QNo:- 23 ,Correct Answer:- *D*

Explanation:- *Refer to the second paragraph of the passage. The lines " Wonks in the sticks will be inspired by new ideas that walled-off capitals cannot*
conjure up." imply that the people who support decentralising central government functions are likely to agree with the option " Policy makers may benefit from fresh thinking in a new environment".
Similarly, the lines "Autonomous regulators perform best far from the pressure and lobbying of the big city." imply the agreement with the option " More independence could be enjoyed by regulatory bodies located away from political centres".
For the agreement with the option " It reduces expenses as infrastructure costs and salaries are lower in smaller cities", refer to the second half of the fourth paragraph.
The option " It could weaken the nexus between bureaucrats and media in the capital" is not mentioned and hence should be the most appropriate answer.

QNo:- 24 ,Correct Answer:- *B*

Explanation:- *The second line of the passage determines " to promote their trading interests" as the answer.*

QNo:- 25 ,Correct Answer:- *4132*

Explanation:- *The opener in this case will be 4 as it introduces the idea of representation of 'clock - time ' with respect to 'time is money' perspective'.After this 1 as there is clear link 'this representation'.*
3 is explaining that actually caring time is often more focussed on clock though clock time has been seen as a masculine artefact.
Hence 3 questions stts concept of clock time as masculine artefact.
2 concludes and answers the question being raised in 3

QNo:- 26 ,Correct Answer:- *3421*

Explanation:- *The opening sentence is 3 as it introduces the topic of the discussion i.e.' balance of nature' and its perception as per the author.After this 4 will come as it defines this 'balance of nature as 'telelogy'. After this 2 will come as 'parts' in 4 can be linked clearly with 'parts' in 2. 1 will conclude the sequence.*

QNo:- 27 ,Correct Answer:- *2143*

Explanation:- *Sentence 2 is an opener as it clearly defines and introduces 'atonality'.*
1 & 4 form a mandatory pair as 4 is in contrast with 1.
'your tune may change' in 3 implies that your opinion may change. so the opinion i.e stt 1 has to come before 3 though not necessarily immediately precede it. hence 143 The sequence is concluded by 3.

QNo:- 28 ,Correct Answer:- *D*

Explanation:- *The passage says that the language evolved over a period of time , and it is a complex process based on features of cognition suc as memory. This has been best captured by option 4. Option 1 misses the cognition and role of the memory. Option 2 is partial in terms of summarizing the passage. Option 3 touches that this feature is seen only in humans and not in other species.*

QNo:- 29 ,Correct Answer:- *1*

Explanation:- *After reading all the sentences , a clear pair that emerges is 2-5*
2-5 'speaking about yourself in the third person' is the change being talked about in 5 'this small change'
'It' in 2 refers to 'research' in 3 Hence 3-2-5
3 talks about rumination which is introduced in 4 Hence 4325

we find that context is about ways of self realization' and it says that ' Simple rumination' is not the way to achieve it. Then 3 describes the drawback of this process. 'It' in 2 refers to 'research' in 3 Hence 3-2 After this 5 highlights the benefit of 'ancient method i.e. ''illeism' . The sequence of these four sentences is 4325. 1 is odd one out.

QNo:- 30 ,Correct Answer:- *C*

Explanation:- *The passage mentions that social movement organizations struggle to achieve critical mass. Also, that the organizations with hybrid identities are able are able to mobilize individuals with different points of view. To state this point, the author gives example of individuals with past involvement in non-anti-war movements and those related to the antiwar movement are likely to join hybrid organizations. Hence, "Organizations with hybrid identities are able to mobilize individuals with different points of view" captures the essence of the passage the best out of the given options and should be the answer. The other three options talk only of a part of the passage and hence cannot be a better summary.*

QNo:- 31 ,Correct Answer:- *2*

Explanation:- *After reading all the sentences , it is seen that context is about 'inference occurs in many single panel comics.' So the opening sentence of the discussion is 1. 'inferences' in 1 can be linked with ' requires you to imagine'.*
*5 further tells 'how it goes'. stts 3 and 5 both talk about the panel being shown. As funniest not has been shown so to get the joke 'you actually have to figure out' something regarding the missing panel(s). The plural panels being talked about in 4 '**These"** are introduced in their plural form in 5 **"a series of panels"***
The sequence becomes '1354' and sentence 2 is misfit here as it doesn't fit in the para
;

QNo:- 32 ,Correct Answer:- *2431*

Explanation:- *After reading all the sentences, we find that topic of the discussion is on 'Adaptive behaviour' and on what factors does it depend'. So sentence 2 has to be the opener. The word 'equivalent' in 2 can be linked with same word in 4. How we cognitively economize(Stt 2) is by categorizing(Stt4) How this 'categorization' is percieved is highlighted by 3.*
The information is not arbitary(Stt3) because Living things typically exhibit correlational structure(stt1).. Hence the sequence is 2431.
In the source article, stt pairs 24 and 31 are from different paras though the paras are in continuity

QNo:- 33 ,Correct Answer:- *A*

Explanation:- *The passage highlights following points:*
1. open-plan offices and cubicles were invented by architects and designers who thought that to break down the social walls that divide people, you had to break down the real walls, too.
2. Modernist architects saw walls and rooms as downright fascist.
3. But companies took up their idea less out of a democratic ideology than a desire to pack in as many workers as they could. the essence has been well captured by option 1.

Option 2 is incorrect as nowhere does the author opine that Wall-free office spaces ***could have worked out the way*** *their utopian inventors intended*

Option 3 is incorrect as it's not stated that companies don't believe in democratic ideology which the designers believed in, rather what mattered more to companies was cost cutting which open-planned offices allowed for.

Option 4 is incorrect as cubicles have been talked about in line 1 of para 2, so cubicles weren't a soln which the option represents them as

QNo:- 34 ,Correct Answer:- *2*

Explanation:- *After reading all the sentences , we find that context is about plastic pollution in seas and how it is dangerous for marine creatures. The opening sentence is therefore 4. After this 1 will come as it tells 'why it is problematic'. 5 further explains it and 3 is the extension of 5. The coherent sequence thus become 4153. 2 is odd one out as it tells the 'numerical proportion of ocean plastic falls' , which is not discussed in other sentences.*

QNo:- 35 ,Correct Answer:- *25*

Explanation:- *The information in the given triangles is summarized in following table:*

	Revenue			Cost		
Year	Electronic	Clothing	Produce	Electronic	Clothing	Produce
2016	50%	20%	30%	30%	30%	40%
2017	30%	30%	40%	40%	30%	30%
2018	20%	40%	40%	30%	20%	50%

As Profit is computed as (Revenue – Cost) and Percentage Profit as Profit/Cost
It is known that
1. *The percentage profit for the store in 2016 was 100%.it means that half of revenue is cost and half the revenue is profit. Now let revenue in 2016 is* ***100*** *so cost in 2016 is* ***50.***
2*.store's revenue doubled from 2016 to 2017, and its cost doubled from 2016 to 2018.so revenue in 2107 is 200 and cost in 2108 is 150.*
3*.There was no profit from the Electronics department in 2017.from this we can find the cost in 2017 shown below:*
No profit means revenue and cost are equal . as revenue in the Electronics department in 2017 is 30% of 200 which is equal to cost in the Electronics department in 2017 which further is40% of total cost.

40% of total cost in 2017=30% of 200 =60
So total cost in 2017= $\frac{60}{40\%}=150$
4. *In 2018, the revenue from the Clothing department was the same as the cost incurred in the Produce department*
from this we can find the total revenue in 2018 as shown below
as the cost incurred in the Produce department in 2018 is 50% of 100 which is equal to revenue from the Clothing department in2018which further is 40% of total revenue.
40% of total revenue in 2018=50% of 100 =50
So total revenue in 2018= $\frac{50}{40\%}=125$
Now whole solution is summarized as below:

Revenue					**Cost**			
Total	**year**	**Electronics**	**Clothing**	**Produce**	**Total**	**Electronic**	**Clothing**	**Produce**
100	2016	50%	20%	30%	50	30%	30%	40%
200	2017	30%	30%	40%	150	40%	30%	30%
125	2018	20%	40%	40%	100	30%	20%	50%

Total revenue in 2018 is 125 and total cost =100
Hence % profit= $\frac{(125-100)}{100}\times=$***25%***

QNo:- 36 ,Correct Answer:- *C*

Explanation:- *The information in the given triangles is summarized in following table:*

	Revenue			Cost		
Year	Electronic	Clothing	Produce	Electronic	Clothing	Produce
2016	50%	20%	30%	30%	30%	40%
2017	30%	30%	40%	40%	30%	30%
2018	20%	40%	40%	30%	20%	50%

As Profit is computed as (Revenue – Cost) and Percentage Profit as Profit/Cost
It is known that
1. *The percentage profit for the store in 2016 was 100%.it means that half of revenue is cost and half the revenue is profit. Now let revenue in 2016 is* ***100*** *so cost in 2016 is* ***50.***
2*.store's revenue doubled from 2016 to 2017, and its cost doubled from 2016 to 2018.so revenue in 2107 is 200 and cost in 2108 is 150.*
3*.There was no profit from the Electronics department in 2017.from this we can find the cost in 2017 shown below:*
No profit means revenue and cost are equal . as revenue in the Electronics department in 2017 is 30% of 200 which is equal to cost in the Electronics department in 2017 which further is40% of total cost.

40% of total cost in 2017=30% of 200 =60
So total cost in 2017= $\frac{60}{40\%}=150$
4. *In 2018, the revenue from the Clothing department was the same as the cost incurred in the Produce department*
from this we can find the total revenue in 2018 as shown below
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So total revenue in 2018= $\frac{50}{40\%}=125$
Now whole solution is summarized as below:

Revenue					**Cost**			
Total	**year**	**Electronics**	**Clothing**	**Produce**	**Total**	**Electronic**	**Clothing**	**Produce**
100	2016	50%	20%	30%	50	30%	30%	40%
200	2017	30%	30%	40%	150	40%	30%	30%
125	2018	20%	40%	40%	100	30%	20%	50%

Required ratio=40% of 200:40% of 125=80:50=8:5

QNo:- 37 ,Correct Answer:- *70*

Explanation:- *The information in the given triangles is summarized in following table:*

	Revenue			Cost		
Year	Electronic	Clothing	Produce	Electronic	Clothing	Produce
2016	50%	20%	30%	30%	30%	40%
2017	30%	30%	40%	40%	30%	30%
2018	20%	40%	40%	30%	20%	50%

As Profit is computed as (Revenue – Cost) and Percentage Profit as Profit/Cost
It is known that
1. *The percentage profit for the store in 2016 was 100%.it means that half of revenue is cost and half the revenue is profit. Now let revenue in 2016 is* ***100*** *so cost in 2016 is* ***50.***
2*.store's revenue doubled from 2016 to 2017, and its cost doubled from 2016 to 2018.so revenue in 2107 is 200 and cost in 2108 is 150.*
3*.There was no profit from the Electronics department in 2017.from this we can find the cost in 2017 shown below:*
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from this we can find the total revenue in 2018 as shown below
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40% of total revenue in 2018=50% of 100 =50
So total revenue in 2018= $\frac{50}{40\%}=125$
Now whole solution is summarized as below:

Revenue					**Cost**			
Total	**year**	**Electronics**	**Clothing**	**Produce**	**Total**	**Electronic**	**Clothing**	**Produce**
100	2016	50%	20%	30%	50	30%	30%	40%
200	2017	30%	30%	40%	150	40%	30%	30%
125	2018	20%	40%	40%	100	30%	20%	50%

Total profit in 2016=100-50=50
Profit in 2016 from Electronics dept=50% of 100-30% of 50=50-15=35
Hence required %= $\frac{35}{50}\times 100=70\%$

QNo:- 38 ,Correct Answer:- *A*

Explanation:- *The information in the given triangles is summarized in following table:*

	Revenue			Cost		
Year	Electronic	Clothing	Produce	Electronic	Clothing	Produce
2016	50%	20%	30%	30%	30%	40%
2017	30%	30%	40%	40%	30%	30%
2018	20%	40%	40%	30%	20%	50%

As Profit is computed as (Revenue – Cost) and Percentage Profit as Profit/Cost
It is known that
1. *The percentage profit for the store in 2016 was 100%.it means that half of revenue is cost and half the revenue is profit. Now let revenue in 2016 is* ***100*** *so cost in 2016 is* ***50.***
2*.store's revenue doubled from 2016 to 2017, and its cost doubled from 2016 to 2018.so revenue in 2107 is 200 and cost in 2108 is 150.*
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40% of total cost in 2017=30% of 200 =60
So total cost in 2017= $\frac{60}{40\%}=150$
4. *In 2018, the revenue from the Clothing department was the same as the cost incurred in the Produce department*
from this we can find the total revenue in 2018 as shown below
as the cost incurred in the Produce department in 2018 is 50% of 100 which is equal to revenue from the Clothing department in2018which further is 40% of total revenue.
40% of total revenue in 2018=50% of 100 =50
So total revenue in 2018= $\frac{50}{40\%}=125$
Now whole solution is summarized as below:

Revenue					**Cost**			
Total	**year**	**Electronics**	**Clothing**	**Produce**	**Total**	**Electronic**	**Clothing**	**Produce**
100	2016	50%	20%	30%	50	30%	30%	40%
200	2017	30%	30%	40%	150	40%	30%	30%
125	2018	20%	40%	40%	100	30%	20%	50%

$$\text{profit percentages of the store in } 2017=\frac{200-150}{150}\times 100=\frac{50}{150}\times 100=33.33\%$$

$$\text{profit percentages of the store in } 2018=\frac{125-100}{100}\times 100=\frac{25}{150}\times 100=25\%$$

hence required difference=33.33%-25%=8.3

QNo:- 39 ,Correct Answer:- *13*

Explanation:- *Now there were two important points that had to be kept in mind while solving this block were that*

(i) As it is known that the average amount of money (in rupees) kept in the nine pouches in any column or in any row is an integer. Hence the sum of nine pouches in any row or column should be a multiple of 9.
(ii)In any of nine slots of 3 × 3 grid minimum and maximum amount should be kept in mind while placing the amount in third pouch.
The minimum and maximum amounts of money (in rupees) among the three pouches in each of the nine slots are given in the table below

	Column 1	**Column 2**	**Column 3**
Row 1	(2, 4)	(6, 8)	(1, 3)
Row 2	(3, 5)	(1, 1)	(6, 20)
Row 3	(1, 2)	(1, 2)	(2, 5)

It is also known that the total amount of money kept in the three pouches in the first column of the third row is Rs. 4.so amount of money kept in the third pouch should have been 1 and also the maximum and minimum amount of money kept in second column of the second row is(1,1) so amount of money kept in the third pouch here should also be 1.
Now further money in the first column in seven of nine pouches is 6+8+4=18 .also no pouch is empty and sum of all in pouches any column or row is a multiple of 9 . so in remaining two pouches in colomn 1 the sum should be 9 making total sum as 27 in first colomn. (we cannot make sum 36 or next multiple of 9 as it will violate max and min range given) .so third pouch in colomn 1 of row 1 is 4 and colomn 2 of row 5.
Further moving in same way and keeping all condition in mind we get the following solution

	Column 1	**Column 2**	**Column 3**	**total**
Row 1	(2, 4) ,4 **Sum=2+4+4=10**	(6, 8),6 **Sum=6+8+6=20**	(1, 3),2 **Sum=1+3+2=6**	**10+20+6=36**
Row 2	(3, 5),5 **Sum=3+5+5=13**	(1, 1),1 **Sum=1+1+1=3**	(6, 20),12 **Sum=6+ 20+12=38**	**13+3+38=54**
Row 3	(1, 2),1 **Sum=1+2+1=4**	(1, 2),1 **Sum=1+2+1=4**	(2, 5),3 **Sum=2+5+3=10**	**4+4+10=18**
Total	**10+13+6=27**	**20+3+4=27**	**6+38+10=54**	

As shown the required sum is 13

QNo:- 40 ,Correct Answer:- *8*

Explanation:- *Now there were two important points that had to be kept in mind while solving this block were that*

(i) As it is known that the average amount of money (in rupees) kept in the nine pouches in any column or in any row is an integer. Hence the sum of nine pouches in any row or column should be a multiple of 9.
(ii)In any of nine slots of 3 × 3 grid minimum and maximum amount should be kept in mind while placing the amount in third pouch..
The minimum and maximum amounts of money (in rupees) among the three pouches in each of the nine slots are given in the table below

	Column 1	**Column 2**	**Column 3**
Row 1	(2, 4)	(6, 8)	(1, 3)
Row 2	(3, 5)	(1, 1)	(6, 20)
Row 3	(1, 2)	(1, 2)	(2, 5)

It is also known that the total amount of money kept in the three pouches in the first column of the third row is Rs. 4.so amount of money kept in the third pouch should have been 1 and also the maximum and minimum amount of money kept in second column of the second row is(1,1) so amount of money kept in the third pouch here should also be 1.
Now further money in the first column in seven of nine pouches is 6+8+4=18 .also no pouch is empty and sum of all in pouches any column or row is a multiple of 9 . so in remaining two pouches in column1 the sum should be 9 making total sum as 27 in first column. (we cannot make sum 36 or next multiple of 9 as it will violate max and min range given) .so third pouch in column 1 of row 1 is 4 and column 1 of row 2 is 5
Further moving in same way and keeping all condition in mind we get the following solution

	Column 1	**Column 2**	**Column 3**	**total**
Row 1	(2, 4) ,4 **Sum=2+4+4=10**	(6, 8),6 **Sum=6+8+6=20**	(1, 3),2 **Sum=1+3+2=6**	**10+20+6=36**
Row 2	(3, 5),5 **Sum=3+5+5=13**	(1, 1),1 **Sum=1+1+1=3**	(6, 20),12 **Sum=6+ 20+12=38**	**13+3+38=54**
Row 3	(1, 2),1 **Sum=1+2+1=4**	(1, 2),1 **Sum=1+2+1=4**	(2, 5),3 **Sum=2+5+3=10**	**4+4+10=18**
Total	**10+13+6=27**	**20+3+4=27**	**6+38+10=54**	

As shown 8 pouches contain exactly one coin

QNo:- 41 ,Correct Answer:- *2*

Explanation:- *Now there were two important points that had to be kept in mind while solving this block were that*

(i) As it is known that the average amount of money (in rupees) kept in the nine pouches in any column or in any row is an integer. Hence the sum of nine pouches in any row or column should be a multiple of 9.
(ii) In any of nine slots of 3 × 3 grid minimum and maximum amount should be kept in mind while placing the amount in third pouch.
The minimum and maximum amounts of money (in rupees) among the three pouches in each of the nine slots are given in the table below

	Column 1	**Column 2**	**Column 3**
Row 1	(2, 4)	(6, 8)	(1, 3)
Row 2	(3, 5)	(1, 1)	(6, 20)
Row 3	(1, 2)	(1, 2)	(2, 5)

It is also known that the total amount of money kept in the three pouches in the first column of the third row is Rs. 4.so amount of money kept in the third pouch should have been 1 and also the maximum and minimum amount of money kept in second column of the second row is(1,1) so amount of money kept in the third pouch here should also be 1.
Now further money in the first column in seven of nine pouches is 6+8+4=18 .also no pouch is empty and sum of all in pouches any column or row is a multiple of 9 . so in remaining two pouches in column1 the sum should be 9 making total sum as 27 in first column. (we cannot make sum 36 or next multiple of 9 as it will violate max and min range given) .so third pouch in column1 of row 1 is 4 and column 2 of row 5.
Further moving in same way and keeping all condition in mind we get the following solution

	Column 1	**Column 2**	**Column 3**	**total**
Row 1	(2, 4) ,4 **Sum=2+4+4=10**	(6, 8),6 **Sum=6+8+6=20**	(1, 3),2 **Sum=1+3+2=6**	**10+20+6=36**
Row 2	(3, 5),5 **Sum=3+5+5=13**	(1, 1),1 **Sum=1+1+1=3**	(6, 20),12 **Sum=6+ 20+12=38**	**13+3+38=54**
Row 3	(1, 2),1 **Sum=1+2+1=4**	(1, 2),1 **Sum=1+2+1=4**	(2, 5),3 **Sum=2+5+3=10**	**4+4+10=18**
Total	**10+13+6=27**	**20+3+4=27**	**6+38+10=54**	

average amount (in rupees) of its three pouches will be an integer in the slot in which sum of amount is multiple of 3 which is there in two slots i.e.column 3 of row 1where sum is 6 and column two of row two where sum is 3

QNo:- 42 ,Correct Answer:- *3*

Explanation:- *Now there were two important points that had to be kept in mind while solving this block were that*

(i)As it is known that the average amount of money (in rupees) kept in the nine pouches in any column or in any row is an integer. Hence the sum of nine pouches in any row or column should be a multiple of 9.
(ii) In any of nine slots of 3 × 3 grid minimum and maximum amount should be kept in mind while placing the amount in third pouch..
The minimum and maximum amounts of money (in rupees) among the three pouches in each of the nine slots are given in the table below

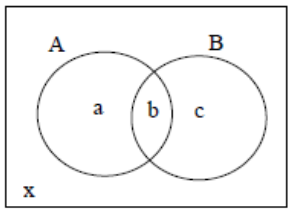
	Column 1	**Column 2**	**Column 3**
Row 1	(2, 4)	(6, 8)	(1, 3)
Row 2	(3, 5)	(1, 1)	(6, 20)
Row 3	(1, 2)	(1, 2)	(2, 5)

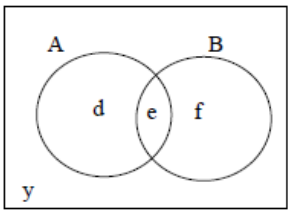
It is also known that the total amount of money kept in the three pouches in the first column of the third row is Rs. 4.so amount of money kept in the third pouch should have been 1 and also the maximum and minimum amount of money kept in second column of the second row is(1,1) so amount of money kept in the third pouch here should also be 1.
Now further money in the first column in seven of nine pouches is 6+8+4=18 .also no pouch is empty and sum of all in pouches any column or row is a multiple of 9 . so in remaining two pouches in colomn 1 the sum should be 9 making total sum as 27 in first colomn. (we cannot make sum 36 or next multiple of 9 as it will violate max and min range given) .so third pouch in colomn 1 of row 1 is 4 and colomn 2 of row 5.
Further moving in same way and keeping all condition in mind we get the following solution

	Column 1	**Column 2**	**Column 3**	**total**
Row 1	(2, 4) ,4 **Sum=2+4+4=10**	(6, 8),6 **Sum=6+8+6=20**	(1, 3),2 **Sum=1+3+2=6**	**10+20+6=36**
Row 2	(3, 5),5 **Sum=3+5+5=13**	(1, 1),1 **Sum=1+1+1=3**	(6, 20),12 **Sum=6+ 20+12=38**	**13+3+38=54**
Row 3	(1, 2),1 **Sum=1+2+1=4**	(1, 2),1 **Sum=1+2+1=4**	(2, 5),3 **Sum=2+5+3=10**	**4+4+10=18**
Total	**10+13+6=27**	**20+3+4=27**	**6+38+10=54**	

As shown above ,the number of slots for which the total amount in its three pouches strictly exceeds Rs. 10 is 3

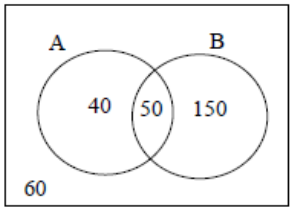
QNo:- 43 ,Correct Answer:- *64*

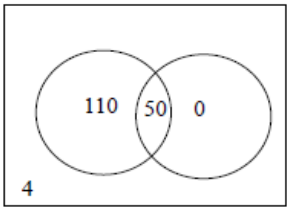




Explanation:- Ragini (300) Sunita (200)

From second point we have d + e = 160 --(1)
From third point we have a + b = 90 --(2)
From fourth point we have e + f = 50 --(3)
From fifth point we have 40% of (A & not B) = Ragini
⇒ 60% of 9A & not B) = Sunita
⇒ d + y = 1-59a + x) ----(4)
From point six, we have, f = 0
From point seven, we have x = 20% of 300 = 60
Now as f = 0, (3) ⇒ e = 50
∴ (1) ⇒ d = 110
⇒ y = 200 - (110 + 50) = 40
(4) ⇒ 150 = 1.5 (a + 60) ⇒ a + 60 = 100 ⇒ a = 40
(2) ⇒ b = 50
∴ c = 300 - (40 + 50 + 60) = 150
So we have

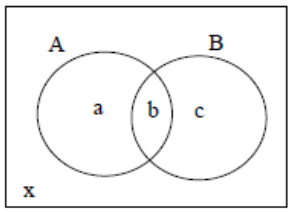


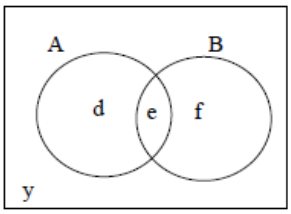


Ragini (300) Sunita (200)

$$\text{Required \%age} = \frac{160}{250} \times 100 = 64\%$$

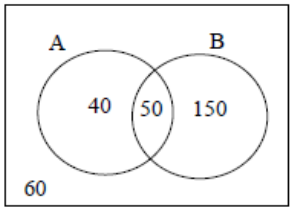
QNo:- 44 ,Correct Answer:- *84*

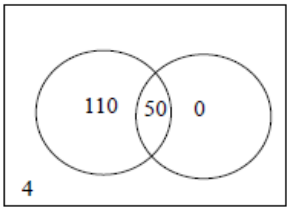




Explanation:- Ragini (300) Sunita (200)

From second point we have d + e = 160 --(1)
From third point we have a + b = 90 --(2)
From fourth point we have e + f = 50 --(3)
From fifth point we have 40% of (A & not B) = Ragini
⇒ 60% of 9A & not B) = Sunita
⇒ d + y = 1-59a + x) ----(4)
From point six, we have, f = 0
From point seven, we have x = 20% of 300 = 60
Now as f = 0, (3) ⇒ e = 50
∴ (1) ⇒ d = 110
⇒ y = 200 - (110 + 50) = 40
(4) ⇒ 150 = 1.5 (a + 60) ⇒ a + 60 = 100 ⇒ a = 40
(2) ⇒ b = 50
∴ c = 300 - (40 + 50 + 60) = 150
So we have



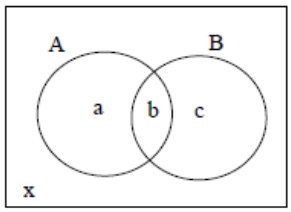


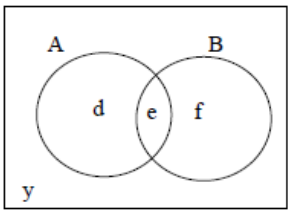
Ragini (300) Sunita (200)

Students who did not support A = 150 + 60+40=250

$\therefore$ required %age $= \frac{210}{250} \times 100 = 84\%$

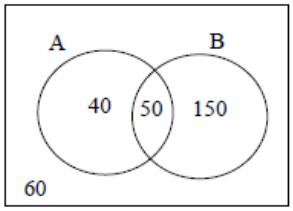
QNo:- 45 ,Correct Answer:- *B*

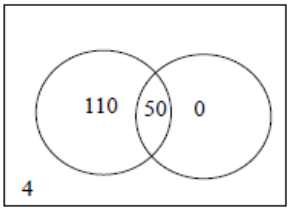




Explanation:- Ragini (300) Sunita (200)

From second point we have d + e = 160 --(1)
From third point we have a + b = 90 --(2)
From fourth point we have e + f = 50 --(3)
From fifth point we have 40% of (A & not B) = Ragini
⇒ 60% of 9A & not B) = Sunita
⇒ d + y = 1-59a + x) ----(4)
From point six, we have, f = 0
From point seven, we have x = 20% of 300 = 60
Now as f = 0, (3) ⇒ e = 50
∴ (1) ⇒ d = 110
⇒ y = 200 - (110 + 50) = 40
(4) ⇒ 150 = 1.5 (a + 60) ⇒ a + 60 = 100 ⇒ a = 40
(2) ⇒ b = 50
∴ c = 300 - (40 + 50 + 60) = 150
So we have

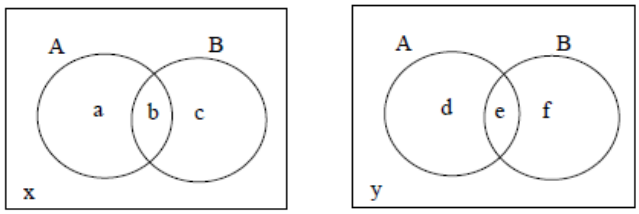




Ragini (300) Sunita (200)

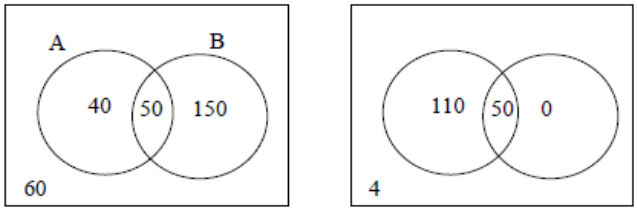
Students who supported both proposals = 50 + 50 = 100
∴ required %age $= \frac{50}{100} \times 100 = 50\%$

QNo:- 46 ,Correct Answer:- *A*



Explanation:- Ragini (300) Sunita (200)

From second point we have d + e = 160 --(1)
From third point we have a + b = 90 --(2)
From fourth point we have e + f = 50 --(3)
From fifth point we have 40% of (A & not B) = Ragini
⇒ 60% of 9A & not B) = Sunita
⇒ d + y = 1-59a + x) ----(4)
From point six, we have, f = 0
From point seven, we have x = 20% of 300 = 60
Now as f = 0, (3) ⇒ e = 50
∴ (1) ⇒ d = 110
⇒ y = 200 - (110 + 50) = 40
(4) ⇒ 150 = 1.5 (a + 60) ⇒ a + 60 = 100 ⇒ a = 40
(2) ⇒ b = 50
∴ c = 300 - (40 + 50 + 60) = 150
So we have



Ragini (300) Sunita (200)

Students who supported both proposals = 50 + 50 = 100

150 students supported proposal B only supported Ragini

QNo:- 47 ,Correct Answer:- *D*

Explanation:- *After analyzing the information following teams are made*

	Members	Languages spoken
Team 1	Robert, Paula, Terence	Arabic, French, Chinese, English
Team 2	Paula, Sally, Terence	French, Basque, Chinese, English
Team 3	Quentin ,Paula, Sally	Dutch, Basque, Chinese, English

AS Shown above Quentin is not a member of Team 2.

QNo:- 48 ,Correct Answer:- *D*

Explanation:- *After analyzing the information following teams are made*

	Members	Languages spoken
Team 1	Robert, Paula, Terence	Arabic, French, Chinese, English
Team 2	Paula, Sally, Terence	French, Basque, Chinese, English
Team 3	Quentin ,Paula, Sally	Dutch, Basque, Chinese, English

AS Shown above among the given four people Sally is a part of exactly two teams.

QNo:- 49 ,Correct Answer:- *A*

Explanation:- *After analyzing the information following teams are made*

	Members	Languages spoken
Team 1	Robert, Paula, Terence	Arabic, French, Chinese, English
Team 2	Paula, Sally, Terence	French, Basque, Chinese, English
Team 3	Quentin ,Paula, Sally	Dutch, Basque, Chinese, English

AS Shown above Paula is a member of all teams

QNo:- 50 ,Correct Answer:- *B*

Explanation:- *After analyzing the information following teams are made*

	Members	Languages spoken
Team 1	Robert, Paula, Terence	Arabic, French, Chinese, English
Team 2	Paula, Sally, Terence	French, Basque, Chinese, English
Team 3	Quentin ,Paula, Sally	Dutch, Basque, Chinese, English

AS Shown above Apart from Chinese and English ,Arabic and French languages are spoken by Team 1.

QNo:- 51 ,Correct Answer:- *D*

Explanation:- *Maximum number of patients can be catered on single day when The queue is never empty and all doctors work to full capacity.*
The clinic is open from 9 a.m. to 11.30 a.m i.e. for 150 minutes every day.
Maximum number of patients that can be seen by Dr. Ben are 150/10=15
Maximum number of patients that can be seen by Dr. Kane are 150/15=10
Maximum number of patients that can be seen by Dr. Dr. Wayne are 150/25=6
So the maximum number of patients that the clinic can cater to on any single day are=15+10+6=31

QNo:- 52 ,Correct Answer:- *D*

Explanation:- *The queue is never empty on one particular Saturday it means all the doctor are working to their full capacity.*
(i) *Maximum number of patients that can be seen by Dr. Ben are 150/10=15.*
As charges of of Dr. Ben are 100/-
So maximum amount in consultation charges earned by Dr. Ben are 15×100 = ***1500/-***
(ii) *Maximum number of patients that can be seen by Dr. Kane are 150/15=10*
As charges of of Dr. Kane are 200/-
So maximum amount in consultation charges earned by Dr. Kane are 10×200= ***2000/-***
(iii)*Maximum number of patients that can be seen by Dr. Dr. Wayne are 150/25=6*
As charges of of Dr. Wayne are 300/-
So maximum amount in consultation charges earned by Dr. Ben are 6×300 = ***1800/-***
Hence among three doctors Dr. Kane would earn the maximum amount in consultation charges on Saturday.

QNo:- 53 ,Correct Answer:- *A*

Explanation:- *Mr. Singh who is having token no 13 will be in clinic for the maximum duration on the on which he will be attended by Dr. Wayne*
The movement of patients having token number number 1-13 on each given day is shown below

Movement of patients having token number 1-13 on **Monday**					
Ben		Kane		Wayne	
Token no	Time	Token no	Time	Token no	Time
1	9:00-9:10	2	9:00-9:15	3	9:00-9:25
4	9:10-9:20	5	9:15-9:30	7	9:25-9:50
6	9:20-9:30				
8.	9:30-9:40	9	9:30-9:45		
10.	9:40-9:50	11	9:45:10:00		
12	9:50-10:00			**13**	**9:50-10:15**

Movement of patients having token number 1-13 on **Wednesday**					
Wayne		Ben		Kane	
Token no	Time	Token no	Time	Token no	Time
1	9:00-9:25	2	9:00-9:10	3	9:00-9:15
		4	9:10-9:20	5	9:15-9:30
		6	9:20:9:30		
7	9:25:9:50	8	9:30-9:40	9	9:30-9;45
		10	9:40-9:50	11	9:45-10;00
12	9:50-10:15	**13**	**9:50-10:00**		

movement of patients having token number 1-13 on **Friday**					
Kane		Wayne		Ben	
Token no	Time	Token no	Time	Token no	Time
1	9:00-9:15	2	9:00-9:25	3	9:00-9:10
5	9:15-9:30			4	9:10:9:20
				6	9:20-9:30
		7	9:25-9:50		
8	9:30-9:45			9	9:30-9:40
				10	9:40-9:50
11	9:45:10:00	12	9:50 -10:15	**13**	**9:50-10;00**

As shown above Mr. Singh will be in clinic for maximum duration on ***Monday***

QNo:- 54 ,Correct Answer:- *A*

Explanation:-

movement on Thursday as per condition					
Wayne		Ben		Kane	
Token no	Time	Token no	Time	Token no	Time
1	9:00-9:25	2	9:00-9:10		
		3	9:10-9:20	4	9:15-9:30
5	9:30-9:55	6	9:30-9:40		
		7	9:45-9:55	8	9:45-10:00
9	**10:00-10:25**	**10**	**10:00-10:10**		

As shown above token number 11,12 will have same movement as of token number 3 and 4 and the same sequence will follow between 10:11 and between 11:0-11;30.
Hence there is no time duration in which all the three doctors are simultaneously free.

QNo:- 55 ,Correct Answer:- *D*

Explanation:-

There are seven states(Mizoram, Sikkim, Maharashtra ,Goa, Arunachal, Kerala and Meghalaya) which are under Heavy Monsoon State' as per given criterion out of which three (Arunachal, Kerala and Meghalaya) have a negative deviation from respective LPA.

Hence Required%= $\frac{3}{7}\times 100 = 42.86\%$

QNo:- 56 ,Correct Answer:- *D*

Explanation:-
*There are nine states(Gujarat , Karnataka, Rajasthan , MP, Assam, WN, Jharkhand, Delhi and Manipur) which are under 'Low Monsoon State' as per given criterion and their respective 'deviation from LPA' are 30,20,15,10**,-10**,-30,-35,-40 and -60 res.*
Hence required median is -10.

QNo:- 57 ,Correct Answer:- *B*

Explanation:-
states that have actual rainfall of 600 mm or less in 2019 and have a negative deviation from LPA are Assam, WB, Jharkhand, Delhi and Manipur and their respective rainfall are 600,600,400,300 and 400
Hence Required average= $\frac{600+600+400+300+400}{5} = \frac{2300}{5} = 460mm$

QNo:- 58 ,Correct Answer:- *A*

Explanation:-

QNo:- 59 ,Correct Answer:- *C*

Explanation:-

If we broadly see the block two important tasks are to be done
(i)*to find the number of questions in each categories of 5 marks ,10 marks and 15 marks For both MT and ET*

i. To allot each question number the faculty that has made that question for both ET and MT

As minimum the number of questions in each categories of 5 marks ,10 marks and 15 marks for both MT and ET are given. Also ET contained more questions than MT. Now considering all these facts total number of questions categories wise for both MT and ET are given below:

	ET		
	Number of questions	Marks for each question	Total marks
	8	5	40
	3	10	30
	2	15	30
Total	**13**		100

For MT there are two possible cases
Case1

	MT		
	Number of questions	Marks for each question	Total marks
	5	5	25
	3	10	30
	3	15	45
Total	**11**		100

Case2

	MT		
	Number of questions	Marks for each question	Total marks
	4	5	20
	5	10	50
	2	15	30
Total	**11**		100

Further it is given that Annie prepared one question for MT. Every other faculty member prepared more than one questions for MT ,Also considering MT and ET together, each faculty member prepared the same number of questions

Total number of questions are 13+11=24 so each faculty made 4 questions. So keeping in mind all this fact following table gives us the number of question made by each faculty in MT and ET are

	MT	**ET**
Annie	1	3
Beti	2	2
Chetan	2	2
Dave	2	2
Esha	2	2

Fakir	2	2
	11	**13**

*Now the information given is "**All questions prepared by a faculty member appeared consecutively in MT as well as ET**." This information will help us to narrow down the cases. Fakir prepared the first question of MT so he will also solve the second one Chetan prepared the third question in both MT and ET. So considering MT he will solve the forth one. Annie prepared the fifth question for both MT and ET. For MT, this question carried 5 marks.it means ist five questions in MT are of 5 marks this eliminates the second possible case for MT. now filling the faculty name consecutively we come to the conclusion as follws:*

MT	
Q no	faculty
1	Fakir
2	Fakir
3	Chetan
4	Chetan
5	Annie
6	Beti
7	Beti
8	Esha
9	Esha
10	Dave
11	Dave

ET	
Q no	faculty
1	Dave
2	Dave
3	Chetan
4	Chetan
5	Annie
6	Annie
7	Annie
8	Esha
9	Esha
10	Beti
11	Beti
12	Fakir
13	Fakir

The second question in ET was prepared by Dave

***QNo:- 60 ,Correct Answer:-** A*

Explanation:-
If we broadly see the block two important tasks are to be done
***(i)**to find the number of questions in each categories of 5 marks ,10 marks and 15 marks*
For both MT and ET
i. To allot each question number the faculty that has made that question for both ET and MT
As minimum the number of questions in each categories of 5 marks ,10 marks and 15 marks for both MT and ET are given. Also ET contained more questions than MT. Now considering all these facts total number of questions categories wise for both MT and ET are given below:

ET			
	Number of questions	Marks for each question	Total marks
	8	5	40
	3	10	30
	2	15	30
Total	**13**		100

For MT there are two possible cases
Case1

MT			
	Number of questions	Marks for each question	Total marks

	5	5	25
	3	10	30
	3	15	45
Total	**11**		100

Case2

MT			
	Number of questions	Marks for each question	Total marks
	4	5	20
	5	10	50
	2	15	30
Total	**11**		100

Further it is given that Annie prepared one question for MT. Every other faculty member prepared more than one questions for MT ,Also considering MT and ET together, each faculty member prepared the same number of questions

Total number of questions are 13+11=24 so each faculty made 4 questions. So keeping in mind all this fact following table gives us the number of question made by each faculty in MT and ET are

	MT	**ET**
Annie	1	3
Beti	2	2
Chetan	2	2
Dave	2	2
Esha	2	2
Fakir	2	2
	11	**13**

*Now the information given is "**All questions prepared by a faculty member appeared consecutively in MT as well as ET**." This information will help us to narrow down the cases. Fakir prepared the first question of MT so he will also solve the second one Chetan prepared the third question in both MT and ET. So considering MT he will solve the forth one. Annie prepared the fifth question for both MT and ET. For MT, this question carried 5 marks.it means ist five questions in MT are of 5 marks this eliminates the second possible case for MT. now filling the faculty name consecutively we come to the conclusion as follws:*

MT	
Q no	faculty
1	Fakir
2	Fakir
3	Chetan
4	Chetan
5	Annie
6	Beti
7	Beti
8	Esha
9	Esha
10	Dave
11	Dave

ET	
Q no	faculty
1	Dave
2	Dave
3	Chetan
4	Chetan
5	Annie
6	Annie
7	Annie
8	Esha
9	Esha
10	Beti

11	Beti
12	Fakir
13	Fakir

As shown above ,5-mark questions were there in MT and ET combined were 8+5=13

QNo:- 61 ,Correct Answer:- *C*

Explanation:-
If we broadly see the block two important tasks are to be done
(i)*to find the number of questions in each categories of 5 marks ,10 marks and 15 marks*
For both MT and ET
i. To allot each question number the faculty that has made that question for both ET and MT
As minimum the number of questions in each categories of 5 marks ,10 marks and 15 marks for both MT and ET are given. Also ET contained more questions than MT. Now considering all these facts total number of questions categories wise for both MT and ET are given below:

	ET		
	Number of questions	Marks for each question	Total marks
	8	5	40
	3	10	30
	2	15	30
Total	**13**		100

For MT there are two possible cases
Case1

	MT		
	Number of questions	Marks for each question	Total marks
	5	5	25
	3	10	30
	3	15	45
Total	**11**		100

Case2

	MT		
	Number of questions	Marks for each question	Total marks
	4	5	20
	5	10	50
	2	15	30
Total	**11**		100

Further it is given that Annie prepared one question for MT. Every other faculty member prepared more than one questions for MT ,Also considering MT and ET together, each faculty member prepared the same number of questions

Total number of questions are 13+11=24 so each faculty made 4 questions. So keeping in mind all this fact following table gives us the number of question made by each faculty in MT and ET are

	MT	**ET**

Annie	1	3
Beti	2	2
Chetan	2	2
Dave	2	2
Esha	2	2
Fakir	2	2
	11	**13**

*Now the information given is "**All questions prepared by a faculty member appeared consecutively in MT as well as ET**." This information will help us to narrow down the cases. Fakir prepared the first question of MT so he will also solve the second one Chetan prepared the third question in both MT and ET. So considering MT he will solve the forth one. Annie prepared the fifth question for both MT and ET. For MT, this question carried 5 marks.it means ist five questions in MT are of 5 marks this eliminates the second possible case for MT. now filling the faculty name consecutively we come to the conclusion as follws:*

MT	
Q no	faculty
1	Fakir
2	Fakir
3	Chetan
4	Chetan
5	Annie
6	Beti
7	Beti
8	Esha
9	Esha
10	Dave
11	Dave

ET	
Q no	faculty
1	Dave
2	Dave
3	Chetan
4	Chetan
5	Annie
6	Annie
7	Annie
8	Esha
9	Esha
10	Beti
11	Beti
12	Fakir
13	Fakir

Only Dave, Esha and Fakir prepared 15-mark questions for MT and ET

***QNo:- 62 ,Correct Answer:-** C*

Explanation:-
If we broadly see the block two important tasks are to be done
***(i)**to find the number of questions in each categories of 5 marks ,10 marks and 15 marks*
For both MT and ET
i. To allot each question number the faculty that has made that question for both ET and MT
As minimum the number of questions in each categories of 5 marks ,10 marks and 15 marks for both MT and ET are given. Also ET contained more questions than MT. Now considering all these facts total number of questions categories wise for both MT and ET are given below:

ET			
	Number of questions	Marks for each question	Total marks
	8	5	40
	3	10	30
	2	15	30
Total	**13**		100

For MT there are two possible cases

Case1

MT			
	Number of questions	Marks for each question	Total marks
	5	5	25
	3	10	30
	3	15	45
Total	**11**		100

Case2

MT			
	Number of questions	Marks for each question	Total marks
	4	5	20
	5	10	50
	2	15	30
Total	**11**		100

Further it is given that Annie prepared one question for MT. Every other faculty member prepared more than one questions for MT ,Also considering MT and ET together, each faculty member prepared the same number of questions

Total number of questions are 13+11=24 so each faculty made 4 questions. So keeping in mind all this fact following table gives us the number of question made by each faculty in MT and ET are

	MT	**ET**
Annie	1	3
Beti	2	2
Chetan	2	2
Dave	2	2
Esha	2	2
Fakir	2	2
	11	**13**

*Now the information given is "**All questions prepared by a faculty member appeared consecutively in MT as well as ET**." This information will help us to narrow down the cases. Fakir prepared the first question of MT so he will also solve the second one Chetan prepared the third question in both MT and ET. So considering MT he will solve the forth one. Annie prepared the fifth question for both MT and ET. For MT, this question carried 5 marks.it means ist five questions in MT are of 5 marks this eliminates the second possible case for MT. now filling the faculty name consecutively we come to the conclusion as follws:*

MT	
Q no	faculty
1	Fakir
2	Fakir
3	Chetan
4	Chetan
5	Annie
6	Beti

ET	
Q no	faculty
1	Dave
2	Dave
3	Chetan
4	Chetan
5	Annie

7	Beti
8	Esha
9	Esha
10	Dave
11	Dave

6	Annie
7	Annie
8	Esha
9	Esha
10	Beti
11	Beti
12	Fakir
13	Fakir

Among given options Tenth question was prepared by Beti in ET

QNo:- 63 ,Correct Answer:- *C*

Explanation:- *If we broadly see the block two important tasks are to be done*
(i) *to find the break up of points of each player after round 6 and between round 7-10*
(ii) To allot each match its Ist , second and third winner
Round 1-6

Player No.	Player Name	Points after Round 6	Possible break up 1	Possible break up 2	Possible break up 3
1	Amita	8	**7+1**		
2	Bala	2	1+1		
3	Chen	3	3	1+1+1	
4	David	6	3+3	3+1+1+1	
5	Eric	3	3	1+1+1	
6	Fatima	10	7+3	3+3+3+1	7+1+1+1
7	Gordon	17	7+7+3	7+3+3+1	
8	Hansa	1	1		
9	Ikea	2	1+1		
10	Joshin	14	7+7		

Player No.	Player Name	Points after Round 6	Final breakup
1	Amita	8	**7+1**
2	Bala	2	1+1
3	Chen	3	3
4	David	6	3+3
5	Eric	3	3
6	Fatima	10	7+3
7	Gordon	17	7+7+3
8	Hansa	1	1
9	Ikea	2	1+1
10	Joshin	14	7+7

now after round 6 we need six 7's, six 3's and six 1's as in each round there will one first ,one second and one seven position.to balance that we need to reject other possible breakups of Chen, David. Eric, Fatima, Gordon(shown yellow).now final break up of scores for each playrer after round 6 is shown in table given below

The next task is to now find the top three players of each round. As we know that

Amita will be playing in first round and sixth round . so her scores 7 and 1 could be only in these rounds. As Joshin has scored two 7.s and in first 6 round he is playing in nly 5th band 6th round . so both 7 scored by him are in these two rounds. So score 7 scored by Amita will be for round 1 . proceeding in this way we will reach the

Round	Ist position **(7)**	IInd position **(3)**	III rd position **(1)**
1	Amita	Chen/ David	Bala
2	Gordon	Chen/ David	Bala
3	Fatima	Eric	Hansa
4	Gordon	David	Ikea
5	Joshin	Fatima	Ikea
6	Joshin	Gordon	Amita

*Following conclusion for round **1-6***

Now we will do the same process for round 7-10

Round 7-10

Player No.	**Player Name**	**Points scored for round 7-10**	**Possible break up 1**	**Possible break up 2**
1	Amita	10	**7+3**	3+3+3+1
2	Bala	3	3	1+1+1
3	Chen	3	1+1+1	3
4	David	0	7	3+3+1
5	Eric	7	0	0
6	Fatima	0	0	0
7	Gordon	0	3	1+1+1
8	Hansa	3	1	
9	Ikea	15	7+7+1	
10	Joshin	3	3	1+1+1

now after round 7-10 we need four 7's, four 3's and four 1's as in each round there will one first ,one second and one seven position.
Further it is given that
Only two players scored in three consecutive rounds. One of them was Chen. No other player scored in any two consecutive rounds. So apart from Chen , other one should be Ikea as she is having a option of three scores only so she will have to be settled down with7+7+1. So we will get the following table

Player No.	**Player Name**	**Points after Round 7-10**	**Final breakup**
1	Amita	10	**7+3**
2	Bala	3	3
3	Chen	3	1+1+1
4	David	0	0
5	Eric	7	7
6	Fatima	0	0

7	Gordon	0	0
8	Hansa	3	3
9	Ikea	15	7+7+1
10	Joshin	3	3

As Only two players scored in three consecutive rounds in this stage and they are Chen and Ikea having scores 1,1,1 and 7,7 and 1. Further Ikea which is not in 10^{th} round will have scores in 7^{th} 8^{th} and 9^{th} round and chen would have scored in 8^{th} 9^{th} and 10^{th} round. Proceeding in this way we get the following table for round 7-10

Round	Ist position **(7)**	IInd position **(3)**	III rd position **(1)**
7	Amita	Joshin	Ikea
8	Ikea	Bala/Hansa	Chen
9	Ikea	Bala/Hansa	Chen
10	Eric	Amita	Chen

As solved above
Final conclusion after round 6 is

Round	Ist position **(7)**	IInd position **(3)**	III rd position **(1)**
1	Amita	Chen/ David	Bala
2	Gordon	Chen/ David	Bala
3	Fatima	Eric	Hansa
4	Gordon	David	Ikea
5	Joshin	Fatima	Ikea
6	Joshin	Gordon	Amita

As shown above the scores of Chen, David, and Eric respectively after Round 3 are
3, 3, 3

QNo:- 64 ,Correct Answer:- *C*

Explanation:- *If we broadly see the block two important tasks are to be done*
(i) *to find the break up of points of each player after round 6 and between round 7-10*
(ii) To allot each match its Ist , second and third winner
Round 1-6

Player No.	Player Name	Points after Round 6	Possible break up 1	Possible break up 2	Possible break up 3
1	Amita	8	**7+1**		
2	Bala	2	1+1		
3	Chen	3	3	1+1+1	
4	David	6	3+3	3+1+1+1	
5	Eric	3	3	1+1+1	
6	Fatima	10	7+3	3+3+3+1	7+1+1+1
7	Gordon	17	7+7+3	7+3+3+1	

8	Hansa	1	1
9	Ikea	2	1+1
10	Joshin	14	7+7

Player No.	Player Name	Points after Round 6	Final breakup
1	Amita	8	**7+1**
2	Bala	2	1+1
3	Chen	3	3
4	David	6	3+3
5	Eric	3	3
6	Fatima	10	7+3
7	Gordon	17	7+7+3
8	Hansa	1	1
9	Ikea	2	1+1
10	Joshin	14	7+7

now after round 6 we need six 7's, six 3's and six 1's as in each round there will one first ,one second and one seven position.to balance that we need to reject other possible breakups of Chen, David. Eric, Fatima, Gordon(shown yellow).now final break up of scores for each playrer after round 6 is shown in table given below

The next task is to now find the top three players of each round. As we know that

Amita will be playing in first round and sixth round . so her scores 7 and 1 could be only in these rounds. As Joshin has scored two 7.s and in first 6 round he is playing in nly 5^{th} band 6^{th} round . so both 7 scored by him are in these two rounds. So score 7 scored by Amita will be for round 1 . proceeding in this way we will reach the

Round	Ist position **(7)**	IInd position **(3)**	III rd position **(1)**
1	Amita	Chen/ David	Bala
2	Gordon	Chen/ David	Bala
3	Fatima	Eric	Hansa
4	Gordon	David	Ikea
5	Joshin	Fatima	Ikea
6	Joshin	Gordon	Amita

*Following conclusion for round **1-6***

Now we will do the same process for round 7-10

Round 7-10

Player No.	Player Name	Points scored for round 7-10	Possible break up 1	Possible break up 2
1	Amita	10	**7+3**	3+3+3+1
2	Bala	3	3	1+1+1
3	Chen	3	1+1+1	3
4	David	0	7	3+3+1
5	Eric	7	0	0

6	Fatima	0	0	0
7	Gordon	0	3	1+1+1
8	Hansa	3	1	
9	Ikea	15	7+7+1	
10	Joshin	3	3	1+1+1

now after round 7-10 we need four 7's, four 3's and four 1's as in each round there will one first ,one second and one seven position.
Further it is given that
Only two players scored in three consecutive rounds. One of them was Chen. No other player scored in any two consecutive rounds. So apart from Chen , other one should be Ikea as she is having a option of three scores only so she will have to be settled down with7+7+1. So we will get the following table

Player No.	**Player Name**	**Points after Round 7-10**	**Final breakup**
1	Amita	10	**7+3**
2	Bala	3	3
3	Chen	3	1+1+1
4	David	0	0
5	Eric	7	7
6	Fatima	0	0
7	Gordon	0	0
8	Hansa	3	3
9	Ikea	15	7+7+1
10	Joshin	3	3

As Only two players scored in three consecutive rounds in this stage and they are Chen and Ikea having scores 1,1,1 and 7,7 and 1. Further Ikea which is not in 10^{th} round will have scores in 7^{th} 8^{th} and 9^{th} round and chen would have scored in 8^{th} 9^{th} and 10^{th} round. Proceeding in this way we get the following table for round 7-10

Round	Ist position **(7)**	IInd position **(3)**	III rd position **(1)**
7	Amita	Joshin	Ikea
8	Ikea	Bala/Hansa	Chen
9	Ikea	Bala/Hansa	Chen
10	Eric	Amita	Chen

As shown in table last three positions after Round 4 are of Hansa, Ikea, Joshin with scores 1,1 and 0

QNo:- 65 ,Correct Answer:- *A*

Explanation:- *If we broadly see the block two important tasks are to be done*
(i) *to find the break up of points of each player after round 6 and between round 7-10*
(ii) To allot each match its Ist , second and third winner
Round 1-6

Player No.	**Player Name**	**Points after Round 6**	**Possible break**	**Possible break up**	**Possible break up**

			up 1	2	3
1	Amita	8	**7+1**		
2	Bala	2	1+1		
3	Chen	3	3	1+1+1	
4	David	6	3+3	3+1+1+1	
5	Eric	3	3	1+1+1	
6	Fatima	10	7+3	3+3+3+1	7+1+1+1
7	Gordon	17	7+7+3	7+3+3+1	
8	Hansa	1	1		
9	Ikea	2	1+1		
10	Joshin	14	7+7		

Player No.	Player Name	Points after Round 6	Final breakup
1	Amita	8	**7+1**
2	Bala	2	1+1
3	Chen	3	3
4	David	6	3+3
5	Eric	3	3
6	Fatima	10	7+3
7	Gordon	17	7+7+3
8	Hansa	1	1
9	Ikea	2	1+1
10	Joshin	14	7+7

now after round 6 we need six 7's, six 3's and six 1's as in each round there will one first ,one second and one seven position.to balance that we need to reject other possible breakups of Chen, David. Eric, Fatima, Gordon(shown yellow).now final break up of scores for each playrer after round 6 is shown in table given below

The next task is to now find the top three players of each round. As we know that

Amita will be playing in first round and sixth round . so her scores 7 and 1 could be only in these rounds. As Joshin has scored two 7.s and in first 6 round he is playing in nly 5th band 6th round . so both 7 scored by him are in these two rounds. So score 7 scored by Amita will be for round 1 . proceeding in this way we will reach the

Round	Ist position **(7)**	IInd position **(3)**	III rd position **(1)**
1	Amita	Chen/ David	Bala
2	Gordon	Chen/ David	Bala
3	Fatima	Eric	Hansa
4	Gordon	David	Ikea
5	Joshin	Fatima	Ikea
6	Joshin	Gordon	Amita

*Following conclusion for round **1-6***

Now we will do the same process for round 7-10

Round 7-10

Player No.	Player Name	Points scored for round 7-10	Possible break up 1	Possible break up 2

1	Amita	10	**7+3**	3+3+3+1
2	Bala	3	3	1+1+1
3	Chen	3	1+1+1	3
4	David	0	7	3+3+1
5	Eric	7	0	0
6	Fatima	0	0	0
7	Gordon	0	3	1+1+1
8	Hansa	3	1	
9	Ikea	15	7+7+1	
10	Joshin	3	3	1+1+1

now after round 7-10 we need four 7's, four 3's and four 1's as in each round there will one first ,one second and one seven position.
Further it is given that
Only two players scored in three consecutive rounds. One of them was Chen. No other player scored in any two consecutive rounds. So apart from Chen , other one should be Ikea as she is having a option of three scores only so she will have to be settled down with7+7+1. So we will get the following table

Player No.	**Player Name**	**Points after Round 7-10**	**Final breakup**
1	Amita	10	**7+3**
2	Bala	3	3
3	Chen	3	1+1+1
4	David	0	0
5	Eric	7	7
6	Fatima	0	0
7	Gordon	0	0
8	Hansa	3	3
9	Ikea	15	7+7+1
10	Joshin	3	3

As Only two players scored in three consecutive rounds in this stage and they are Chen and Ikea having scores 1,1,1 and 7,7 and 1. Further Ikea which is not in 10^{th} round will have scores in 7^{th} 8^{th} and 9^{th} round and chen would have scored in 8^{th} 9^{th} and 10^{th} round. Proceeding in this way we get the following table for round 7-10

Round	Ist position **(7)**	IInd position **(3)**	III rd position **(1)**
7	Amita	Joshin	Ikea
8	Ikea	Bala/Hansa	Chen
9	Ikea	Bala/Hansa	Chen
10	Eric	Amita	Chen

As shown Ikea scored points in five rounds which was maximum in number .

QNo:- 66 ,Correct Answer:- *A*

Explanation:- *If we broadly see the block two important tasks are to be done*
(i) *to find the break up of points of each player after round 6 and between round 7-10*
(ii) To allot each match its Ist , second and third winner
Round 1-6

Player No.	Player Name	Points after Round 6	Possible break up 1	Possible break up 2	Possible break up 3
1	Amita	8	**7+1**		
2	Bala	2	1+1		
3	Chen	3	3	1+1+1	
4	David	6	3+3	3+1+1+1	
5	Eric	3	3	1+1+1	
6	Fatima	10	7+3	3+3+3+1	7+1+1+1
7	Gordon	17	7+7+3	7+3+3+1	
8	Hansa	1	1		
9	Ikea	2	1+1		
10	Joshin	14	7+7		

Player No.	Player Name	Points after Round 6	Final breakup
1	Amita	8	**7+1**
2	Bala	2	1+1
3	Chen	3	3
4	David	6	3+3
5	Eric	3	3
6	Fatima	10	7+3
7	Gordon	17	7+7+3
8	Hansa	1	1
9	Ikea	2	1+1
10	Joshin	14	7+7

now after round 6 we need six 7's, six 3's and six 1's as in each round there will one first ,one second and one seven position.to balance that we need to reject other possible breakups of Chen, David. Eric, Fatima, Gordon(shown yellow).now final break up of scores for each playrer after round 6 is shown in table given below

The next task is to now find the top three players of each round. As we know that

Amita will be playing in first round and sixth round . so her scores 7 and 1 could be only in these rounds. As Joshin has scored two 7.s and in first 6 round he is playing in nly 5th band 6th round . so both 7 scored by him are in these two rounds. So score 7 scored by Amita will be for round 1 . proceeding in this way we will reach the

Round	Ist position **(7)**	IInd position **(3)**	III rd position **(1)**
1	Amita	Chen/ David	Bala
2	Gordon	Chen/ David	Bala
3	Fatima	Eric	Hansa
4	Gordon	David	Ikea

Following conclusion for round ***1-6***

5	Joshin	Fatima	Ikea
6	Joshin	Gordon	Amita

Now we will do the same process for round 7-10

Round 7-10

Player No.	Player Name	Points scored for round 7-10	Possible break up 1	Possible break up 2
1	Amita	10	**7+3**	3+3+3+1
2	Bala	3	3	1+1+1
3	Chen	3	1+1+1	3
4	David	0	7	3+3+1
5	Eric	7	0	0
6	Fatima	0	0	0
7	Gordon	0	3	1+1+1
8	Hansa	3	1	
9	Ikea	15	7+7+1	
10	Joshin	3	3	1+1+1

now after round 7-10 we need four 7's, four 3's and four 1's as in each round there will one first ,one second and one seven position.
Further it is given that
Only two players scored in three consecutive rounds. One of them was Chen. No other player scored in any two consecutive rounds. So apart from Chen , other one should be Ikea as she is having a option of three scores only so she will have to be settled down with7+7+1. So we will get the following table

Player No.	Player Name	Points after Round 7-10	Final breakup
1	Amita	10	**7+3**
2	Bala	3	3
3	Chen	3	1+1+1
4	David	0	0
5	Eric	7	7
6	Fatima	0	0
7	Gordon	0	0
8	Hansa	3	3
9	Ikea	15	7+7+1
10	Joshin	3	3

As Only two players scored in three consecutive rounds in this stage and they are Chen and Ikea having scores 1,1,1 and 7,7 and 1. Further Ikea which is not in 10^{th} round will have scores in 7^{th} 8^{th} and 9^{th} round and chen would have scored in 8^{th} 9^{th} and 10^{th} round. Proceeding in this way we get the following table for round 7-10

Round	Ist position **(7)**	IInd position **(3)**	III rd position **(1)**
7	Amita	Joshin	Ikea
8	Ikea	Bala/Hansa	Chen

9	Ikea	Bala/Hansa	Chen
10	Eric	Amita	Chen

As shown Amita, Chen, Eric scored points in the last round.

QNo:- 67 ,Correct Answer:- *C*

Explanation:- *Vessel A Contains 50 gm of salt and 450 ml water*
vessel B contains 110 gm of salt and 390 ml water
vessel C contains 160 gm of salt & 340 ml water
After the transfer of 100 ml from A to B
A will contain 360 ml water & 40 gm salt and B will contain 120 gm of salt and 480 ml water which makes B having 20% salt strength. After the transfer of 100 ml from B to C, C will Contain 180 gm of salt & 420 ml of water making it have salt strength = 30% After the final transfer of 100 ml from C to A, A will contain 70 gm of salt and 430 ml water making the salt strength in A = 14%

Alternate method:-

Vessel	A	B	C
Salt Strength	10%	22%	32%
After 100 ml transfer from A to B	10% (400 ml total)	$\frac{10+22\times5}{6}$ = 20%	32%
After 100 ml Transfer from B to C	10% (400 ml Total)		$\frac{20+5\times32}{6}$ = 30%
After 100 ml transfer from C to A	$\frac{10\times4+30}{5}$ = 14%		

Answer = 14%

QNo:- 68 ,Correct Answer:- *B*

Explanation:- *$7a = -b \Rightarrow b^2 = 49a^2$*
$12a^2 = c$
So, $b^2 + c = 61\,a^2$
So, option ÷ 61 has to be a perfect square . Trying options
(i) $\frac{3721}{61} = 61$ which is not a perfect square
(ii) $\frac{549}{61} = 9$ which is a perfect square
(iii) Not a multiple of 61
(iv) $\frac{427}{61} = 7$ which is not a perfect square
(So option B is Correct)

QNo:- 69 ,Correct Answer:- *C*

Explanation:- *Let the circumference = 100m. Let the meeting point is X.*
The Distance P to X clockwise is 60 m and distance P to X anti-clockwise is 40 m.
A Travelled 40 m in 12 min, so he can cover 60 m in $\frac{12}{40}\times60 = 18\,\text{min.}$
Speeds of A and B are in the ratio 6:4 (Because A and B covered 60 m & 40 m respectively in the same time so their speeds are in the ratio 6:4)
So the time taken by B to cover 60 m = $\frac{6}{4}\times18$ *min., So 10:27 am is the answer.*

QNo:- 70 ,Correct Answer:- B

Explanation:-

The equilateral triangle has side 20 cm so its height = $\sqrt{3}\times 20/2$ cm. Let the height of the pyramid = x cm then, 10 cm, x cm and $\sqrt{3}\times 20/2$ are Pythagoras triplets with hypotenuse = $\sqrt{3}\times 20/2$

$\Rightarrow x^2 + 100 = 300$

$\Rightarrow x = 10\sqrt{2}$

(2^{nd} Option)

QNo:- 71 ,Correct Answer:- C

Explanation:- $\frac{n^2+7n+12}{n^2-n-12}$

$\frac{(n+4)(n+3)}{(n-4)(n+3)} = \frac{n+4}{n-4}$

Taking the largest option 16, we get $\frac{20}{12}$ which in not an integer. Next, we can try n = 12 which gives $\frac{16}{8}$ = 2 which in an integer. So 3rd option.

QNo:- 72 ,Correct Answer:- C

Explanation:- $X^2-4x-\log_2 A = 0$

For real and distinct roots the quadratic $ax^2+bx+c = 0$ must have,

$b^2-4a\ c > 0$

$\Rightarrow 16 + 4 \log_2 A > 0$

$\Rightarrow \log_2 A > -4$

$\Rightarrow A > 2^{-4}$

$\Rightarrow A > \frac{1}{16}$

(3^{rd} option)

QNo:- 73 ,Correct Answer:- A

Explanation:- Profit from six of the bicycles = 6 × 25 % of x (where x is the purchase price of a bicycle)

Loss from four of the bicycles = 4 × 25% of x

Total net profit = 2000 = 6 × 25% of x – 4 × 25 % of x

$\Rightarrow 1.5x - x = 2000$

$\Rightarrow x = 4000$

QNo:- 74 ,Correct Answer:- C

Explanation:-

Since exactly 20 integers are such that they are ≤ 5, the remaining 10 integers have to be > 5. So the highest possible value of the average of those 20 integers has to be less than 5 otherwise the combined average of all 30 integers will exceed 5. So maximum value as per options is 4.5.

QNo:- 75 ,Correct Answer:- 12

Explanation:- $f(1\times2) = f(1)\, f(2)$
$f(2) = f(1)\, f(2)$
$\Rightarrow f(1) = 1$
Also, $f(2) > f(1)$
Let $f(2) = a$, $f(3)=b$.
$f(4) = f(2) \times f(2) = a^2$
$f(6) = f(2) \times f(3) = ab$
$f(24) = a^3 b = 54$
$\Rightarrow a = 3, b=2$
So $f(18) = f(3) \times f(6) = ab^2 = 12$.

QNo:- 76 ,Correct Answer:- B

Explanation:- $a_1 = 1$
$a_1 - a_2 = 2 \Rightarrow a_2 = -1$
$a_1 - a_2 + a_3 = 3 \Rightarrow a_3 = 1$
$a_1 - a_2 + a_3 - a_4 = 4 \Rightarrow a_4 = -1$
Similarly, $a_5 = 1$, $a_6 = -1$, $a_7 = 1$,.....
$a_{odd} = 1$, $a_{even} = -1$
$a_{51}+a_{52}+$_____$+ a_{1023}$
$1 - 1 + 1 - 1$ _____ $+ 1$
$= 1$

QNo:- 77 ,Correct Answer:- A

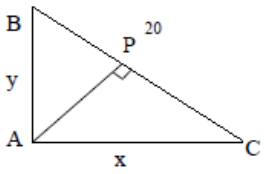
Explanation:- Let the scores of Rama, Mohan and Anjali are R,M and A respectively.
$R = \frac{1}{12}(M+A)$
After the score of each of them increased by 6, the ratio of their scores are 11:10:3 fo Anjali, Mohan & Rama respectively.
Let their scores are 11x, 10x, 3x.
Their original scores before the increase were
11x-6, 10x-6, 3x-6 respectively
So $3x-6 = \frac{1}{12}(11x-6 + 10x -6)$
$3x - 6 = \frac{1}{12}(21x -12)$
$\Rightarrow x = 4$
Anjali's score exceeded Rama's score by
$(11x-6)-(3x-6)=8x=32$

QNo:- 78 ,Correct Answer:- C

Explanation:-
Since cyclist takes one hour to reach from A to B and 45 motor cycles starting from 10:01,10:02,----------,10:45 am leave from A to reach B by 11 am, So the last motorcycle takes 15 min to reach from A to B. Hence every motorcycle takes 15 min to reach from A to B. If the cyclist doubles his speed then he will reach B at 10:30 am and hence the last motorcyclist who will reach B at 10:30 am has to leave from A at 10:15. Therefore 15 motorcycles will reach B in the given time.
Answer= 15

QNo:- 79 ,Correct Answer:- *A*

Explanation:-



$\frac{1}{2}$ xy = $\frac{1}{2}$ × 20 × AP

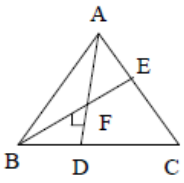
⇒ AP = $\frac{xy}{20}$

For the maximum possible value of AP, x =y=$10\sqrt{2}$ *⇒ maximum (in cm) AP*

= $\frac{(10\sqrt{2})\ (10\sqrt{2})}{20}$ = 10

QNo:- 80 ,Correct Answer:- *B*

Explanation:-



BF = 6 cm, FE = 3cm,
AF = 8cm, FD = 4 cm
Area of triangle ABE =

$\frac{1}{2}$ × BE × AF = $\frac{1}{2}$ × 9 × 8 = 36 cm^2

So area of triangle ABC = 72 cm^2

QNo:- 81 ,Correct Answer:- *4*

Explanation:- *105 =* $n^2 - m^2$ = *(n-m) (n+m)*
$3^1 \times 7^1 \times 5^1$ *= (n-m) (n+m)*
Number of factors of 105
= (1+1) (1+1) (1+1) = 8
So possible pairs for (n-m) & (n+m) are four
(Answer = 4.)

QNo:- 82 ,Correct Answer:- *C*

Explanation:- *Let* 2^{3x} *= y*
⇒ y^2 +2^2 *y-21 = 0*
⇒ y^2*+4y-21=0*
⇒ *y = 3, -7.*
The only possible value is y = 3
⇒ 2^{3x} *= 3*
⇒ *3x =* $\log_2 3$
⇒*x =* $\frac{\log_2 3}{3}$

QNo:- 83 ,Correct Answer:- D

Explanation:- $\sqrt{\log_e \frac{4x-x^2}{3}}$ is a real number

If $\frac{4x-x^2}{3} \geq 1$ (because $\log a \geq 0$ for $a \geq 1$)

$4x - x^2 \geq 3$

$\Rightarrow x^2-4x+3 \leq 0$

$\Rightarrow (x-3)(x-1) \leq 0$

Which is true for $1 \leq x \leq 3$

QNo:- 84 ,Correct Answer:- 12

Explanation:- Let number of regular working hours = x hours and number of overtime working hours = y hours.

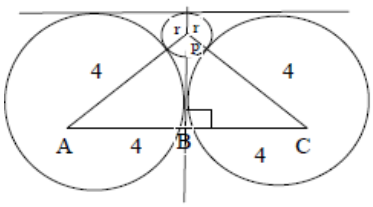
$x+y = 172$

15% of $57x = 114\ y$

$57 \times 15\ \%$ of $(172 - y) = 114\ y$

$\Rightarrow y = 12$

QNo:- 85 ,Correct Answer:- B



Explanation:-

Considers Δ APB having right angle at B

$AP = 4 + r$

$BP = 4 - r$

$AB = 4$

Applying Pythagoras theorem

$(4+r)^2 = (4-r)^2 + 4^2$

$\Rightarrow (4+r)^2 - (4-r)^2 = 16$

$\Rightarrow 16r = 16$

$\Rightarrow r = 1$ cm

QNo:- 86 ,Correct Answer:- 13

Explanation:- $5^x - 3^y = 13438$

$\Rightarrow 5^{x-1} \times 5^1 - 3^y = 13438$ _____1

$\Rightarrow 5^{x-1} + 3^{y+1} = 9686$

$\Rightarrow 5^{x-1} + 3^y \times 3^1 = 9686$ _____2

Let $5^{x-1} = a$ & $3^y = b$

Then $5a-b = 13438$ and

$a+3b = 9686$

$\Rightarrow a = 3125, b = 2187$

$\Rightarrow 5^{x-1} = 3125 \Rightarrow x = 6$

$\Rightarrow 3^y = 2187 \Rightarrow y = 7$

Answer = 13

QNo:- 87 ,Correct Answer:- B

Explanation:- radius = 3 cm
Let height = h cm
HCF of 405,783,351=27
So each cylinder has used 27 cc of material which is equal to the volume of each cylinder.
27 cc = $\pi r^2 h$
$\Rightarrow h = \frac{3}{\pi} cm$

The number of cylinders made = $\frac{405+783+351}{27} = 57$

So total surface area of all the cylinders = $57(2\pi rh + 2\pi r^2)$ cm^2
= $1026(\pi + 1)$ cm^2

QNo:- 88 ,Correct Answer:- 80

Explanation:- Let the score of D = 100
Then Score of C = 80
⇒ Score of B = 100
⇒ Score of A = 90
So if A scores 90 then D scores 100
⇒ if A scores 72 then D scores 80
(Answer = 80)

QNo:- 89 ,Correct Answer:- 44

Explanation:- $2^4 \times 3^5 \times 10^4$
= $2^8 \times 3^5 \times 5^4$
Which has (8+1) (5+1) (4+1) factors
i.e. 270 factors out of which perfect squares greater than 1 will be made by combinations of ($2^0, 2^2, 2^4, 2^6, 2^8$) × ($3^0, 3^2, 3^4$) ×($5^0, 5^2, 5^4$) excluding the combination $2^0 \times 3^0 \times 5^0$
So, possible combinations are = (5 × 3 × 3) – 1 = 44
Alternate method
$2^8 \times 3^5 \times 5^4 = (2^4 \times 3^2 \times 5^2)^2 \times 3$
Total factors which are perfect squares= (4+1)(2+1)(2+1)=45
Required factors = 45-1=44

QNo:- 90 ,Correct Answer:- 48

Explanation:- Let the length of track A = x m
and that of track B = y m
x +y = 325
And $\frac{9x}{6} = \frac{5y}{7.5} \Rightarrow x : y = 4:9$

So $x = \frac{4}{13} \times 325 = 100$

Mary will complete one round of A which is of length 100m with a speed of 7.5 kmph
Or $7.5 \times \frac{5}{18}$ m/s in $\frac{100}{7.5 \times \frac{5}{18}}$ sec.

= 48 sec.

QNo:- 91 ,Correct Answer:- A

Explanation:- Hit and trial approach: Take a = 5 then b = 0, x = 13 and y = 0. So, k = ay-bx = 0
The only option that works here is 1st option.
Technical approach: ax + by = 65 and –bx + ay = k , solving these two equations for x and y , we get , x = (65a – kb) / 25 and y = (65b + ak) / 25
By substituting these values in $x^2 + y^2 = 169$, we get k = 0.

QNo:- 92 ,Correct Answer:- B

Explanation:- 15,19,23,27,--------415 A.P. with common difference = 4
14,19,24,29,---------- 464 A.P. with common difference = 5
LCM of 4 & 5 = 20 which has to be the common difference in the sequence of common terms.
So, Common terms are :
19 , 39, 59 ----- 415
19 + 20(n-1) ≤ 415
20(n-1) ≤ 396
n ≤ 20.8 So, n = 20

QNo:- 93 ,Correct Answer:- A

Explanation:- Let the number of Fiction books = x
and the number of Non-fiction books = y
Given that,
x+y = 11500
1.1x+1.12y = 12760
Solving the above two equations by multiplying the first one by 1.1 and then subtracting from the second equation:
we get .02 y = 110
So y = 5500 and x = 6000
So, 1.1 x = 6000 × 1.1= 6600

QNo:- 94 ,Correct Answer:- 7

Explanation:- Let the six digit number be 100000a + 10000b+1000c+100d+10e+f
Where a,b,c,d,e and f are digits.
Given that,
f= a+b+c ⇒f = a+2a+a=4a
e = a+b ⇒ e = a+2a=3a
c = a ⇒d = 7a
b = 2a
d= e+f ⇒ largest value possible for d is 7

QNo:- 95 ,Correct Answer:- B

Explanation:- Let the salaries of Ramesh , Ganesh and Rajesh were 6x,5x,7x respectively in 2010.
Let the salaries of Ramesh , Ganesh and Rajesh were 3y,4y,3y respectively in 2015.
Salary of Ramesh in 2010 = 6x
Salary of Ramesh in 2015 = 3y = 6x × 1.25 = 7.5x
So y = 2.5 x
Salary of Rajesh in 2010 = 7x and that in 2015 = 3y = 7.5 x

$$\text{Percentage increase in salary of Rajesh} = \frac{7.5x - 7x}{7x} \times 100$$

≈ 7%

QNo:- 96 ,Correct Answer:- *4851*

Explanation:- *The given series has 24 terms and hence can be written as:*
48 n + [1+3+5+--------47] = 5280
48 n + 576 = 5280
So, n = 98
$1+2+3+-------+98 = \frac{98\times 99}{2} = 4851$

QNo:- 97 ,Correct Answer:- *150*

Explanation:- *Using the formula : each interior angle for a regular polygon having n sides =*
$\frac{(n-2)}{n}180^0$
Given that,
$3/2 \text{ times of } \frac{(a-2)}{a}180^0 = \frac{(2a-2)}{2a}180^0 \quad (\text{because } b = 2a)$
⇒ 3a-6=2a-2
⇒a = 4 and b = 8
⇒a + b = 12
Then each interior angle (in degrees)for a regular polygon having 12 sides
$= \frac{(12-2)180}{12} = 150$

QNo:- 98 ,Correct Answer:- *C*

Explanation:- *Let the job was done in x days then given that, 90 % of the job was done by Anil and Sunil, so the work done by them is 0.9*
$\frac{x}{20}+\frac{x-3}{40}=\frac{9}{10}$
x = 13
So the answer is 13 days

QNo:- 99 ,Correct Answer:- *20920*

Explanation:- *Let the amount invested by Bimal is x Rs*
The interest earned by Amal = 8% of 12,000 + 10,000 (1 + 6/200)^2 – 10,000
= 960+609 = 1569
The interest earned by Bimal = $\mathbf{x}\times\frac{7.5}{100}\times 1$
Since both got the same amount of interest
$\text{So, } 1569 = \mathbf{x}\times\frac{7.5}{100}$
So, x = 20920

QNo:- 100 ,Correct Answer:- *B*

Explanation:- *The amount paid by Bimal = x = p × 1.2 × 1.3 = 1.56 p*
The amount paid by Barun = y = p × 0.8 × 0.7 = .56p
$\frac{x-y}{p}=\frac{p}{p}=1$