CAT 2023 SOLVED PAPER (SLOT-1)

Question Numbers (1 to 4): The passage below is accompanied by four questions. Based on the passage, choose the best answer for each question.

RESIDENTS of Lozère, a hilly department in southern France, recite complaints familiar to many rural corners of Europe. In remote hamlets and villages, with names such as Le Bacon and Le Bacon Vieux, mayors grumble about a lack of local schools, jobs, or phone and internet connections. Farmers of grazing animals add another concern: the return of wolves. Eradicated from France last century, the predators are gradually creeping back to more forests and hillsides. "The wolf must be taken in hand," said an aspiring parliamentarian, Francis Palombi, when pressed by voters in an election campaign early this summer. Tourists enjoy visiting a wolf park in Lozère, but farmers fret over their livestock and their livelihoods. . . .

As early as the ninth century, the royal office of the Luparii—wolf-catchers—was created in France to tackle the predators. Those official hunters (and others) completed their job in the 1930s, when the last wolf disappeared from the mainland. Active hunting and improved technology such as rifles in the 19th century, plus the use of poison such as strychnine later on, caused the population collapse. But in the early 1990s the animals reappeared. They crossed the Alps from Italy, upsetting sheep farmers on the French side of the border. Wolves have since spread to areas such as Lozère, delighting environmentalists, who see the predators' presence as a sign of wider ecological health. Farmers, who say the wolves cause the deaths of thousands of sheep and other grazing animals, are less cheerful. They grumble that green activists and politically correct urban types have allowed the return of an old enemy.

Various factors explain the changes of the past few decades. Rural depopulation is part of the story. In Lozère, for example, farming and a once-flourishing mining industry supported a population of over 140,000 residents in the mid-19th century. Today the department has fewer than 80,000 people, many in its towns. As humans withdraw, forests are expanding. In France, between 1990 and 2015, forest cover increased by an average of 102,000 hectares each year, as more fields were given over to trees. Now, nearly one-third of mainland France is covered by woodland of some sort. The decline of hunting as a sport also means more forests fall quiet. In the mid-to-late 20th century over 2m hunters regularly spent winter weekends tramping in woodland, seeking boars, birds and other prey. Today the Fédération Nationale des Chasseurs, the national body, claims 1.1m people hold hunting licences, though the number of active hunters is probably lower. The mostly protected status of the wolf in Europe—hunting them is now forbidden, other than when occasional culls are sanctioned by the state—plus the efforts of NGOs to track and count the animals, also contribute to the recovery of wolf populations.

As the lupine population of Europe spreads westwards, with occasional reports of wolves seen closer to urban areas, expect to hear of more clashes between farmers and those who celebrate the predators' return. Farmers' losses are real, but are not the only economic story. Tourist venues, such as parks where wolves are kept and the animals' spread is discussed, also generate income and jobs in rural areas.

1. Which one of the following has NOT contributed to the growing wolf population in Lozère?
    1. A decline in the rural population of Lozère.
    2. The granting of a protected status to wolves in Europe.
    3. The shutting down of the royal office of the Luparii.
    4. An increase in woodlands and forest cover in Lozère.

2. The inhabitants of Lozère have to grapple with all of the following problems, EXCEPT:
1. livestock losses.
2. poor rural communication infrastructure.
3. lack of educational facilities.
4. decline in the number of hunting licences.

3. The author presents a possible economic solution to an existing issue facing Lozère that takes into account the divergent and competing interests of:
1. environmentalists and politicians.
2. tourists and environmentalists.
3. farmers and environmentalists.
4. politicians and farmers.

4. Which one of the following statements, if true, would weaken the author's claims?
1. The old mining sites of Lozère are now being used as grazing pastures for sheep.
2. Wolf attacks on tourists in Lozère are on the rise.
3. Unemployment concerns the residents of Lozère.
4. Having migrated out in the last century, wolves are now returning to Lozère.

Sol.: For questions 1 to 4:

Passage Explanation:
Para 1: Residents of Lozère, a rural area in southern France, share common rural European concerns such as a lack of local schools, jobs, and communication services. A unique issue they face is the return of wolves, previously eradicated but now reappearing in the region. This has caused concern among farmers about their livestock and livelihoods. The issue has gained political attention, with parliamentarian candidate Francis Palombi addressing it during a campaign.

Para 2: The history of wolf management in France dates back to the ninth century with the establishment of the Luparii, official wolf-catchers. By the 1930s, wolves were extinct in mainland France due to hunting and the use of poisons like strychnine. However, in the early 1990s, wolves re-emerged, migrating from Italy to France, much to the dismay of sheep farmers. While environmentalists view their return positively as a sign of ecological health, farmers are troubled by the threat to their livestock.

Para 3: The changes in the past decades can be attributed to factors like rural depopulation. For example, Lozère's population has significantly decreased since the mid-19th century, leading to an increase in forested areas. The decline in hunting activity has also contributed to quieter forests. The protected status of wolves in Europe and conservation efforts by NGOs have aided in the recovery of wolf populations.

Para 4: As wolves spread westward in Europe, including closer to urban areas, tensions between farmers and wolf advocates are expected to rise. While farmers suffer losses due to wolves, the presence of these animals also boosts tourism and job opportunities in rural areas, highlighting the complex economic impact of wildlife conservation.

1. 3 The passage does not mention the shutting down of the royal office of the Luparii as a contributing factor to the growing wolf population in recent times. The Luparii were historical wolf-catchers whose role ended in the 1930s. This answer option (3. The shutting down of the royal office of the Luparii) is the correct choice because the other options (decline in rural population, granting of protected status, and increase in woodlands) are all directly mentioned as contributing factors to the resurgence of the wolf population.
Incorrect Answers:
1. A decline in the rural population of Lozère: This has contributed to the growing wolf population. As the human population decreases, wolves find more uninhabited space to inhabit.

2. The granting of a protected status to wolves in Europe: This protection has helped the wolf population to grow since hunting them is mostly forbidden.
4. An increase in woodlands and forest cover in Lozère: The expansion of forests provides a more suitable habitat for wolves, thus contributing to their population growth.

2. 4 The passage explicitly mentions issues such as livestock losses, poor rural communication infrastructure, and a lack of educational facilities. However, it does not directly associate the decline in the number of hunting licenses with the problems faced by the inhabitants of Lozère. Therefore, the correct answer is (4) decline in the number of hunting licences).
Incorrect Answers:
1. Livestock losses: This is a significant issue mentioned in the passage, particularly due to the return of wolves.
2. Poor rural communication infrastructure: The passage mentions a lack of phone and internet connections as a problem.
3. Lack of educational facilities: The local mayors grumble about a lack of local schools, so this is a problem for

3. 3 The passage discusses the conflict between the interests of farmers (concerned about livestock losses) and environmentalists (who celebrate the return of wolves as a sign of ecological health). The author suggests that tourist venues, such as parks where wolves are kept, could serve as an economic solution benefiting both parties. This aligns with option (3) farmers and environmentalists.
Incorrect Answers:
1. Environmentalists and politicians: The passage does not specifically discuss a solution involving both these groups.
2. Tourists and environmentalists: While tourists enjoy visiting wolf parks, the passage does not suggest a solution that specifically reconciles the interests of tourists with environmentalists.
4. Politicians and farmers: There is no mention of a solution involving both these groups in the passage.

4. 2 Wolf attacks on tourists in Lozère are on the rise: To determine which statement would weaken the author's claims, we first need to understand the main points presented in the passage. The passage focuses on the return of wolves to Lozère, a rural area in southern France, and the resulting conflict between the interests of farmers, who are concerned about their livestock, and environmentalists, who view the return of wolves as a positive sign of ecological health. Based on the above analysis, option (2), "Wolf attacks on tourists in Lozère are on the rise," would be the most likely to weaken the author's claims, as it introduces a new concern (safety of tourists) that isn't addressed in the passage. However, it's important to note that even this point doesn't directly counter the main argument but rather adds a different perspective to the issue. This could potentially weaken the claim by adding a new dimension to the wolf-related concerns. If wolf attacks on tourists are increasing, it contradicts the notion that wolves are only a threat to livestock and not to humans. This could shift the narrative and add weight to the concerns of those opposed to the wolves' return.
Incorrect Answers:
1. The old mining sites of Lozère are now being used as grazing pastures for sheep: This statement doesn't directly weaken the author's claims. It provides information about land use in Lozère but doesn't address the core issue of the conflict between the return of wolves and the interests of different groups. If anything, it might indicate more potential targets (sheep) for wolves, thereby supporting the farmers' concerns rather than weakening the author's overall narrative.
3. Unemployment concerns the residents of Lozère: While unemployment is a significant issue, this statement does not directly relate to or weaken the author's claims about the conflict arising from the return of wolves. The issue of unemployment is separate from the environmental versus agricultural concerns central to the passage.
4. Having migrated out in the last century, wolves are now returning to Lozère: This statement actually reinforces the author's primary claim rather than weakening it. The fact that wolves are returning to Lozère is a key point in the passage and is the basis of the conflict described.

[Fifty] years after its publication in English [in 1972], and just a year since [Marshall] Sahlins himself died—we may ask: why did [his essay] "Original Affluent Society" have such an impact, and how has it fared since? . . . Sahlins's principal argument was simple but counterintuitive: before being driven into marginal environments by colonial powers, hunter-gatherers, or foragers, were not engaged in a desperate struggle for meager survival. Quite the contrary, they satisfied their needs with far less work than people in agricultural and industrial societies, leaving them more time to use as they wished. Hunters, he quipped, keep bankers' hours. Refusing to maximize, many were "more concerned with games of chance than with chances of game." . . . The so-called Neolithic Revolution, rather than improving life, imposed a harsher work regime and set in motion the long history of growing inequality . . .

Moreover, foragers had other options. The contemporary Hadza of Tanzania, who had long been surrounded by farmers, knew they had alternatives and rejected them. To Sahlins, this showed that foragers are not simply examples of human diversity or victimhood but something more profound: they demonstrated that societies make real choices. Culture, a way of living oriented around a distinctive set of values, manifests a fundamental principle of collective self-determination. . . .

But the point [of the essay] is not so much the empirical validity of the data—the real interest for most readers, after all, is not in foragers either today or in the Paleolithic—but rather its conceptual challenge to contemporary economic life and bourgeois individualism. The empirical served a philosophical and political project, a thought experiment and stimulus to the imagination of possibilities.

With its title's nod toward The Affluent Society (1958), economist John Kenneth Galbraith's famously skeptical portrait of America's postwar prosperity and inequality, and dripping with New Left contempt for consumerism, "The Original Affluent Society" brought this critical perspective to bear on the contemporary world. It did so through the classic anthropological move of showing that radical alternatives to the readers' lives really exist. If the capitalist world seeks wealth through ever greater material production to meet infinitely expansive desires, foraging societies follow "the Zen road to affluence": not by getting more, but by wanting less. If it seems that foragers have been left behind by "progress," this is due only to the ethnocentric self-congratulation of the West. Rather than accumulate material goods, these societies are guided by other values: leisure, mobility, and above all, freedom. . . .

Viewed in today's context, of course, not every aspect of the essay has aged well. While acknowledging the violence of colonialism, racism, and dispossession, it does not thematize them as heavily as we might today. Rebuking evolutionary anthropologists for treating present-day foragers as "left behind" by progress, it too can succumb to the temptation to use them as proxies for the Paleolithic. Yet these characteristics should not distract us from appreciating Sahlins's effort to show that if we want to conjure new possibilities, we need to learn about actually inhabitable worlds.

5. The author of the passage mentions Galbraith's "The Affluent Society" to:
    1. show how Sahlins's views complemented Galbraith's criticism of the consumerism and inequality of contemporary society.
    2. document the influence of Galbraith's cynical views on modern consumerism on Sahlins's analysis of pre-historic societies.
    3. show how Galbraith's theories refute Sahlins's thesis on the contentment of pre-hunter-gatherer communities.
    4. contrast the materialist nature of contemporary growth paths with the pacifist content ways of living among the foragers.

6. The author mentions Tanzania's Hadza community to illustrate:
    1. how pre-agrarian societies did not hamper the emergence of more advanced agrarian practices in contiguous communities.
    2. how two vastly different ways of living and working were able to coexist in proximity for centuries.
    3. that hunter-gatherer communities' subsistence-level techniques equipped them to survive well into contemporary times.
    4. that forager communities' lifestyles derived not from ignorance about alternatives, but from their own choice.

7. The author of the passage criticises Sahlins's essay for its:
   1. failure to supplement its thesis with robust empirical data.
   2. critique of anthropologists who disparage the choices of foragers in today's society.
   3. outdated values regarding present-day foragers versus ancient foraging communities.
   4. cursory treatment of the effects of racism and colonialism on societies.

8. We can infer that Sahlins's main goal in writing his essay was to:
   1. hold a mirror to an acquisitive society, with examples of other communities that have chosen successfully to be non-materialistic.
   2. counter Galbraith's pessimistic view of the inevitability of a capitalist trajectory for economic growth.
   3. put forth the view that, despite egalitarian origins, economic progress brings greater inequality and social hierarchies.
   4. highlight the fact that while we started off as a fairly contented egalitarian people, we have progressively

Sol.: For questions 5 to 8:

Passage Explanation:

Para 1: Fifty years after its publication, Marshall Sahlins' essay "Original Affluent Society" remains influential. Sahlins argued that hunter-gatherers were not desperately struggling for survival but were in fact living with more leisure time compared to those in agricultural and industrial societies. He suggested that the Neolithic Revolution, which transitioned humans to farming, led to a harsher work regime and greater inequality.

Para 2: Sahlins pointed out that foraging societies, like the contemporary Hadza of Tanzania, consciously chose their lifestyle despite knowing about alternatives like farming. This demonstrated that societies make intentional choices based on cultural values, highlighting the principle of collective self-determination.

Para 3: The essay's significance lies more in its conceptual challenge to contemporary economic life and individualism than in the empirical accuracy of the data about foragers. It serves as a philosophical and political thought experiment, stimulating the imagination about alternative ways of living.

Para 4: "The Original Affluent Society" draws parallels with John Kenneth Galbraith's "The Affluent Society" and critiques postwar American consumerism. Sahlins used anthropological perspectives to present foraging societies as viable alternatives to capitalist materialism, emphasizing values like leisure, mobility, and freedom over material accumulation.

Para 5: In the current context, some aspects of the essay may seem outdated, particularly its lighter focus on issues like colonialism, racism, and dispossession. However, its core message, urging the exploration of different ways of living to imagine new possibilities, remains relevant.

5. 1 Show how Sahlins's views complemented Galbraith's criticism of the consumerism and inequality of contemporary society.

   The passage notes that Sahlins's essay, "The Original Affluent Society," had a thematic connection to Galbraith's "The Affluent Society." Both works offer critical perspectives on contemporary society's focus on material wealth and consumerism. Sahlins's argument about foraging societies pursuing affluence not through material accumulation but through wanting less is seen as complementing Galbraith's skepticism about postwar prosperity and inequality in America.

   Incorrect Answers:
   2. Document the influence of Galbraith's cynical views on modern consumerism on Sahlins's analysis of pre-historic societies: The passage doesn't imply that Galbraith directly influenced Sahlins's work; rather, it suggests a thematic connection or a nod to Galbraith's work.
   3. Show how Galbraith's theories refute Sahlins's thesis on the contentment of pre-hunter-gatherer communities: Galbraith's work is not presented as a refutation of Sahlins's thesis; instead, both seem to critique certain aspects of modern society.
   4. Contrast the materialist nature of contemporary growth paths with the pacifist content ways of living among the foragers: While there is a contrast drawn, the passage does not specifically describe Galbraith's work as focusing on "pacifist content ways of living."

6. 4 That forager communities' lifestyles derived not from ignorance about alternatives, but from their own choice.
The passage uses the example of the Hadza of Tanzania to highlight a key point of Sahlins's argument: that forager societies, like the Hadza, are aware of alternative ways of living, such as agriculture, but consciously choose to maintain their foraging lifestyle. This illustrates Sahlins's view that forager societies are not just remnants of a past way of life but are actively choosing their cultural values and lifestyle.
Incorrect Answers:
1. How pre-agrarian societies did not hamper the emergence of more advanced agrarian practices in contiguous communities: The passage does not discuss the impact of pre-agrarian societies on the emergence of agrarian practices.
2. How two vastly different ways of living and working were able to coexist in proximity for centuries: The passage doesn't emphasize the coexistence aspect as much as it does the aspect of choice and rejection of alternatives.
3. That hunter-gatherer communities' subsistence level techniques equipped them to survive well into contemporary times: The passage focuses more on the aspect of conscious choice rather than the effectiveness of their subsistence techniques.

7. 4 Cursory treatment of the effects of racism and colonialism on societies.
The passage acknowledges that while Sahlins's essay does recognize the violence of colonialism, racism, and dispossession, it doesn't thematize or delve deeply into these issues as much as might be expected today. The criticism here is that these significant factors in the history and current situation of forager societies are not given the extensive consideration they warrant.
Incorrect Answers:
1. Failure to supplement its thesis with robust empirical data: The author states that the empirical validity of the data is not the main point, suggesting that the criticism is not about the lack of robust data.
2. Critique of anthropologists who disparage the choices of foragers in today's society: The passage does not present this as a criticism of Sahlins's essay.
3. Outdated values regarding present-day foragers versus ancient foraging communities: The passage criticizes

8. 1 Hold a mirror to an acquisitive society, with examples of other communities that have chosen successfully to be non-materialistic.
Sahlins's essay is portrayed as a critique of modern, materialistic societies, using foraging societies as a contrast. These societies, which follow "the Zen road to affluence" by wanting less rather than acquiring more, serve as a challenge to the values of contemporary capitalist societies. The essay is seen as a thought experiment to stimulate the imagination about different ways of living, emphasizing the values of leisure, mobility, and freedom over material accumulation.
Incorrect Answers:
2. Counter Galbraith's pessimistic view of the inevitability of a capitalist trajectory for economic growth: The passage does not suggest that Sahlins was directly countering Galbraith's view.
3. Put forth the view that, despite egalitarian origins, economic progress brings greater inequality and social hierarchies: While this is a theme in Sahlins's work, it is not presented as the main goal of his essay.
4. Highlight the fact that while we started off as a fairly contented egalitarian people, we have progressively

Question Numbers (9 to 12): The passage below is accompanied by four questions. Based on the passage, choose the best answer for each question.

For early postcolonial literature, the world of the novel was often the nation. Postcolonial novels were usually [concerned with] national questions. Sometimes the whole story of the novel was taken as an allegory of the nation, whether India or Tanzania. This was important for supporting anti-colonial nationalism, but could also be limiting – land-focused and inward-looking.

My new book "Writing Ocean Worlds" explores another kind of world of the novel: not the village or nation, but the Indian Ocean world. The book describes a set of novels in which the Indian Ocean is at the centre of the story. It focuses on the novelists Amitav Ghosh, Abdulrazak Gurnah, Lindsey Collen and Joseph Conrad [who have] centred the Indian

Ocean world in the majority of their novels. . . . Their work reveals a world that is outward-looking – full of movement, border-crossing and south-south interconnection. They are all very different – from colonially inclined (Conrad) to radically anti-capitalist (Collen), but together draw on and shape a wider sense of Indian Ocean space through themes, images, metaphors and language. This has the effect of remapping the world in the reader's mind, as centred in the interconnected global south. . . .

The Indian Ocean world is a term used to describe the very long-lasting connections among the coasts of East Africa, the Arab coasts, and South and East Asia. These connections were made possible by the geography of the Indian Ocean. For much of history, travel by sea was much easier than by land, which meant that port cities very far apart were often more easily connected to each other than to much closer inland cities. Historical and archaeological evidence suggests that what we now call globalisation first appeared in the Indian Ocean. This is the interconnected oceanic world referenced and produced by the novels in my book. . . .

For their part Ghosh, Gurnah, Collen and even Conrad reference a different set of histories and geographies than the ones most commonly found in fiction in English. Those [commonly found ones] are mostly centred in Europe or the US, assume a background of Christianity and whiteness, and mention places like Paris and New York. The novels in [my] book highlight instead a largely Islamic space, feature characters of colour and centralise the ports of Malindi, Mombasa, Aden, Java and Bombay. . . . It is a densely imagined, richly sensory image of a southern cosmopolitan culture which provides for an enlarged sense of place in the world.

This remapping is particularly powerful for the representation of Africa. In the fiction, sailors and travellers are not all European. . . . African, as well as Indian and Arab characters, are traders, nakhodas (dhow ship captains), runaways, villains, missionaries and activists. This does not mean that Indian Ocean Africa is romanticised. Migration is often a matter of force; travel is portrayed as abandonment rather than adventure, freedoms are kept from women and slavery is rife. What it does mean is that the African part of the Indian Ocean world plays an active role in its long, rich history and therefore in that of the wider world.

9. On the basis of the nature of the relationship between the items in each pair below, choose the odd pair out:
   1. Indian Ocean novels : Outward-looking
   2. Postcolonial novels : Border-crossing
   3. Indian Ocean world : Slavery
   4. Postcolonial novels : Anti-colonial nationalism

10. Which one of the following statements is not true about migration in the Indian Ocean world?
    1. The Indian Ocean world's migration networks connected the global north with the global south.
    2. The Indian Ocean world's migration networks were shaped by religious and commercial histories of the region.
    3. Geographical location rather than geographical proximity determined the choice of destination for migrants.
    4. Migration in the Indian Ocean world was an ambivalent experience.

11. All of the following claims contribute to the "remapping" discussed by the passage, EXCEPT:
    1. the world of early international trade and commerce was not the sole domain of white Europeans.
    2. the global south, as opposed to the global north, was the first centre of globalisation.
    3. Indian Ocean novels have gone beyond the specifics of national concerns to explore rich regional pasts.
    4. cosmopolitanism originated in the West and travelled to the East through globalisation.

12. All of the following statements, if true, would weaken the passage's claim about the relationship between mainstream English-language fiction and Indian Ocean novels EXCEPT:
    1. most mainstream English-language novels have historically privileged the Christian, white, male experience of travel and adventure.
    2. the depiction of Africa in most Indian Ocean novels is driven by a postcolonial nostalgia for an idyllic past.
    3. very few mainstream English-language novels have historically been set in American and European metropolitan centres.
    4. the depiction of Africa in most Indian Ocean novels is driven by an Orientalist imagination of its cultural crudeness.

Sol.: For questions 9 to 12:

Passage Explanation:

Para 1: Early postcolonial literature often focused on the nation as the main setting for novels, with stories frequently serving as allegories for national issues in countries like India or Tanzania. While this was crucial for supporting anti-colonial nationalism, it was also limiting due to its land-focused and inward-looking nature.

Para 2: The book "Writing Ocean Worlds" explores novels centered around the Indian Ocean world, moving beyond the typical village or national focus. It discusses the works of novelists Amitav Ghosh, Abdulrazak Gurnah, Lindsey Collen, and Joseph Conrad, who depict the Indian Ocean as a hub of outward-looking activities like movement and border-crossing. These novels offer diverse perspectives and contribute to remapping the reader's world view, centering it in the interconnected global south.

Para 3: The term "Indian Ocean world" refers to the historical and long-lasting connections among the coasts of East Africa, the Arab regions, and South and East Asia. Geographical features made sea travel easier than land travel, leading to early forms of globalization. The book highlights how these connections are represented in the novels.

Para 4: The authors Ghosh, Gurnah, Collen, and Conrad present different histories and geographies compared to typical English fiction, which usually centers around Europe or the US. Their novels focus on Islamic spaces, characters of color, and important port cities like Malindi, Mombasa, Aden, Java, and Bombay, offering a richly sensory portrayal of a southern cosmopolitan culture.

Para 5: The novels discussed in the book effectively remap the representation of Africa in literature. African, Indian, and Arab characters play various active roles, from traders to ship captains. While not romanticizing the African part of the Indian Ocean world, acknowledging issues like forced migration and slavery, the novels emphasize Africa's significant contribution to the history of the region and the wider world.

9. 2 Postcolonial novels : Border-crossing

The passage discusses how Indian Ocean novels are characterized by their outward-looking nature and their focus on border-crossing and interconnectedness, which is why 'Indian Ocean novels : Outward-looking' and 'Indian Ocean world : Slavery' fit well within this context. 'Postcolonial novels : Anti-colonial nationalism' is also consistent with the description in the passage of postcolonial novels often being concerned with national questions. However, 'Postcolonial novels : Border-crossing' is the odd one out because the passage describes postcolonial novels as generally more inward-looking and focused on national issues rather than border-crossing.

Incorrect Answers:
1. Indian Ocean novels : Outward-looking: This is consistent with the passage's description of Indian Ocean novels as focusing on movement, border-crossing, and south-south interconnection, making them outward-looking.
3. Indian Ocean world : Slavery: The passage mentions that the Indian Ocean world, including Africa, was involved in rich histories that included slavery. This pairing correctly reflects one aspect of the Indian Ocean world as presented in the passage.
4. Postcolonial novels : Anti-colonial nationalism: The passage mentions that postcolonial novels were often concerned with national questions and supported anti-colonial nationalism. This pairing is accurate according to the passage.

10. 1 The Indian Ocean world's migration networks connected the global north with the global south.

The passage describes the Indian Ocean world as a space primarily connecting East Africa, the Arab coasts, South, and East Asia, emphasizing a south-south interconnection. It does not mention connections between the global north and south in the context of the Indian Ocean world's migration networks. This makes the statement an incorrect representation of the migration patterns described in the passage.

Incorrect Answers:
2. The Indian Ocean world's migration networks were shaped by religious and commercial histories of the region: This is likely true as the passage talks about the connections among various regions with different religious backgrounds and emphasizes trade and interconnectedness.
3. Geographical location rather than geographical proximity determined the choice of destination for migrants: The passage describes how port cities far apart were often more connected to each other than to closer inland cities, indicating that geographical location (i.e., being a port city in the Indian Ocean world) was more significant than proximity.
4. Migration in the Indian Ocean world was an ambivalent experience: The passage acknowledges the complexity of the Indian Ocean world, including aspects like forced migration and the lack of freedom for some, which supports the idea of migration being an ambivalent experience.

11. 4 Cosmopolitanism originated in the West and travelled to the East through globalisation.

The passage emphasizes the longstanding global connections and cosmopolitan culture of the Indian Ocean world, suggesting a rich history of interconnectedness, trade, and cultural exchange independent of Western influence. This contradicts the claim that cosmopolitanism originated in the West and then spread to the East, making it the exception to the remapping theme of the passage.

Incorrect Answers:

1. The world of early international trade and commerce was not the sole domain of white Europeans: This supports the remapping by challenging the Eurocentric view of history and emphasizing the active role of non-European cultures in early global trade.
2. The global south, as opposed to the global north, was the first centre of globalisation: This aligns with the passage's suggestion that what we now call globalization first appeared in the Indian Ocean, indicating an early global interconnectedness centered in the global south.
3. Indian Ocean novels have gone beyond the specifics of national concerns to explore rich regional pasts: This is directly related to the remapping theme, as the passage describes these novels as moving beyond national narratives to focus on the broader Indian Ocean world.

12. 1 Most mainstream English-language novels have historically privileged the Christian, white, male experience of travel and adventure.

This statement is consistent with the passage's argument that mainstream English-language fiction often centers experiences in Europe or the US, with a background of Christianity and whiteness. The other statements, if true, would weaken the passage's claim by either suggesting a different portrayal of Africa in Indian Ocean novels or by contradicting the claim about the typical settings and themes of mainstream English-language novels.

Incorrect Answers:

2. The depiction of Africa in most Indian Ocean novels is driven by a postcolonial nostalgia for an idyllic past: If

3. Very few mainstream English-language novels have historically been set in American and European metropolitan centres: If true, this would contradict the passage's claim that mainstream English-language fiction mostly centers experiences in Europe or the US.
4. The depiction of Africa in most Indian Ocean novels is driven by an Orientalist imagination of its cultural crudeness: If true, this would weaken the claim by suggesting that Indian Ocean novels do not offer a rich and nuanced portrayal of Africa, but rather one that is simplistic and stereotypical.

Question Numbers (13 to 16): The passage below is accompanied by four questions. Based on the passage, choose the best answer for each question.

Many human phenomena and characteristics – such as behaviors, beliefs, economies, genes, incomes, life expectancies, and other things – are influenced both by geographic factors and by non-geographic factors. Geographic factors mean physical and biological factors tied to geographic location, including climate, the distributions of wild plant and animal species, soils, and topography. Non-geographic factors include those factors subsumed under the term culture, other factors subsumed under the term history, and decisions by individual people. . . .

[T]he differences between the current economies of North and South Korea . . . cannot be attributed to the modest environmental differences between [them] . . . They are instead due entirely to the different [government] policies . . . At the opposite extreme, the Inuit and other traditional peoples living north of the Arctic Circle developed warm fur clothes but no agriculture, while equatorial lowland peoples around the world never developed warm fur clothes but often did develop agriculture. The explanation is straightforwardly geographic, rather than a cultural or historical quirk unrelated to geography. . . . Aboriginal Australia remained the sole continent occupied only by hunter/gatherers and with no indigenous farming or herding . . . [Here the] explanation is biogeographic: the Australian continent has no domesticable native animal species and few domesticable native plant species. Instead, the crops and domestic animals that now make Australia a food and wool exporter are all non-native (mainly Eurasian) species such as sheep, wheat, and grapes, brought to Australia by overseas colonists.

Today, no scholar would be silly enough to deny that culture, history, and individual choices play a big role in many human phenomena. Scholars don't react to cultural, historical, and individual-agent explanations by denouncing "cultural determinism," "historical determinism," or "individual determinism," and then thinking no further. But many scholars do react to any explanation invoking some geographic role, by denouncing "geographic determinism" . . .

Several reasons may underlie this widespread but nonsensical view. One reason is that some geographic explanations advanced a century ago were racist, thereby causing all geographic explanations to become tainted by racist associations in the minds of many scholars other than geographers. But many genetic, historical, psychological, and anthropological explanations advanced a century ago were also racist, yet the validity of newer non-racist genetic etc. explanations is widely accepted today.

Another reason for reflex rejection of geographic explanations is that historians have a tradition, in their discipline, of stressing the role of contingency (a favorite word among historians) based on individual decisions and chance. Often that view is warranted . . . But often, too, that view is unwarranted. The development of warm fur clothes among the Inuit living north of the Arctic Circle was not because one influential Inuit leader persuaded other Inuit in 1783 to adopt warm fur clothes, for no good environmental reason.

A third reason is that geographic explanations usually depend on detailed technical facts of geography and other fields of scholarship . . . Most historians and economists don't acquire that detailed knowledge as part of the professional training.

13. All of the following can be inferred from the passage EXCEPT:
    1. individual dictat and contingency were not the causal factors for the use of fur clothing in some very cold climates.
    2. several academic studies of human phenomena in the past involved racist interpretations.
    3. while most human phenomena result from culture and individual choice, some have bio-geographic origins.
    4. agricultural practices changed drastically in the Australian continent after it was colonised.

14. The author criticises scholars who are not geographers for all of the following reasons EXCEPT:
    1. their outdated interpretations of past cultural and historical phenomena.
    2. the importance they place on the role of individual decisions when studying human phenomena.
    3. their labelling of geographic explanations as deterministic.
    4. their rejection of the role of biogeographic factors in social and cultural phenomena.

15. The examples of the Inuit and Aboriginal Australians are offered in the passage to show:
    1. that despite geographical isolation, traditional societies were self-sufficient and adaptive.
    2. how physical circumstances can dictate human behaviour and cultures.
    3. how environmental factors lead to comparatively divergent paths in livelihoods and development.
    4. human resourcefulness across cultures in adapting to their surroundings.

16. All of the following are advanced by the author as reasons why non-geographers disregard geographic influences on human phenomena EXCEPT their:
    1. disciplinary training which typically does not include technical knowledge of geography.
    2. lingering impressions of past geographic analyses that were politically offensive.
    3. belief in the central role of humans, unrelated to physical surroundings, in influencing phenomena.
    4. dismissal of explanations that involve geographical causes for human behaviour.

Sol.: For questions 13 to 16:

Passage Explanation:
Para 1: Human phenomena and characteristics, such as behaviors, beliefs, economies, and genes, are influenced by both geographic and non-geographic factors. Geographic factors include physical and biological elements like climate, species distribution, soils, and topography. Non-geographic factors encompass cultural aspects, historical elements, and individual decisions.

Para 2: The passage illustrates how geographic factors significantly impact human activities, contrasting North and South Korea's economies, which are shaped by governmental policies rather than environmental differences. In contrast, the development of warm clothing among Arctic Circle inhabitants and the absence of agriculture in equatorial regions are directly attributed to geographic conditions. Similarly, Australia's lack of indigenous farming or herding is explained by its biogeography.

Para 3: While it is universally accepted that culture, history, and individual choices significantly influence human phenomena, the author notes a reluctance among scholars to acknowledge the role of geography, often denouncing it as "geographic determinism."

Para 4: The hesitance to accept geographic explanations may stem from historical associations with racist ideologies. The author argues that just as modern, non-racist genetic, historical, and psychological explanations are accepted, so should contemporary geographic explanations be considered valid.

Para 5: Historians often emphasize the role of contingency based on individual decisions and chance, leading to a reflex rejection of geographic explanations. However, this approach can sometimes be unwarranted, as evidenced by the necessity of warm clothing for the Inuit, which was driven by environmental needs rather than individual decisions.

Para 6: The author suggests that another reason for the reluctance to accept geographic explanations is the lack of detailed geographic knowledge among many historians and economists, as such knowledge is not typically part of their professional training.

13. 3 While most human phenomena result from culture and individual choice, some have bio-geographic origins: The passage makes a case for the significance of both geographic and non-geographic factors in influencing human phenomena, which supports this inference.
Incorrect Answers:
1. Individual dictat and contingency were not the causal factors for the use of fur clothing in some very cold

2. Several academic studies of human phenomena in the past involved racist interpretations: The passage acknowledges that many older explanations in various fields, including geography, were racist, which makes this a valid inference.
4. Agricultural practices changed drastically in the Australian continent after it was colonised: While the passage discusses that Aboriginal Australia remained a continent of hunter/gatherers with no indigenous farming or herding due to biogeographic reasons, it does not provide specific information about how agricultural practices changed after colonization. It only mentions that non-native crops and animals were brought to Australia by colonists, but does not detail a drastic change in agricultural practices.

14. 1 Their outdated interpretations of past cultural and historical phenomena.
The passage does not specifically criticize non-geographer scholars for holding outdated interpretations of past cultural and historical phenomena. The criticisms mentioned are regarding their reaction to geographic explanations (such as labeling them as deterministic), their focus on individual decisions, and the rejection of biogeographic factors. The passage doesn't address their views on past cultural and historical phenomena as being outdated.
Incorrect Answers:
2. The importance they place on the role of individual decisions when studying human phenomena: The author

3. Their labelling of geographic explanations as deterministic: The author points out that many scholars reject geographic explanations by denouncing them as "geographic determinism," which is presented as a criticism in the passage.
4. Their rejection of the role of biogeographic factors in social and cultural phenomena: The passage criticizes scholars for overlooking the importance of geographic factors, including biogeographic factors, in influencing human phenomena.

15. 2 How physical circumstances can dictate human behaviour and cultures.
The passage uses the examples of the Inuit and Aboriginal Australians to illustrate how geographic factors significantly influence cultural practices and societal developments. The Inuit developed warm fur clothes due to the cold Arctic climate, while Aboriginal Australians did not develop agriculture due to the lack of domesticable native species. These examples underscore the role of physical, geographic circumstances in shaping human behavior and cultures.

Incorrect Answers:
1. That despite geographical isolation, traditional societies were self-sufficient and adaptive: While the passage does illustrate the adaptation of these societies to their environments, it primarily focuses on the geographic determinants of their lifestyle choices, not necessarily on their self-sufficiency or adaptiveness.
3. How environmental factors lead to comparatively divergent paths in livelihoods and development: This is a valid point made in the passage, showing how geographic factors led to different developments like the absence of agriculture in the Arctic and in Australia.
4. Human resourcefulness across cultures in adapting to their surroundings: While this could be a secondary theme, the main emphasis of the examples is on how geography dictated certain cultural and societal developments, rather than highlighting the resourcefulness of these cultures.

16. 4 Dismissal of explanations that involve geographical causes for human behaviour.
The passage specifically criticizes non-geographers for their reflex rejection of geographic explanations (i.e., denouncing them as "geographic determinism"). However, it does not mention that they dismiss all explanations involving geographical causes. The other reasons cited (disciplinary training lacking in geography, lingering impressions of past offensive analyses, and a focus on human-centric explanations) are mentioned as contributing to the disregard of geographic influences.
Incorrect Answers:
1. Disciplinary training which typically does not include technical knowledge of geography: The passage mentions that most historians and economists don't acquire detailed geographical knowledge as part of their professional training.
2. Lingering impressions of past geographic analyses that were politically offensive: The passage notes that the racist nature of some early geographic explanations has tainted the field in the eyes of many scholars.
3. Belief in the central role of humans, unrelated to physical surroundings, in influencing phenomena: The author points out that historians often emphasize the role of individual decisions and chance, which aligns with a belief in the central role of humans over geographic factors.

17. There is a sentence that is missing in the paragraph below. Look at the paragraph and decide where (option 1, 2, 3, or 4) the following sentence would best fit.
Sentence: The discovery helps to explain archeological similarities between the Paleolithic peoples of China, Japan, and the Americas.
Paragraph: The researchers also uncovered an unexpected genetic link between Native Americans and Japanese people. ___(1)___. During the deglaciation period, another group branched out from northern coastal China and travelled to Japan. ___(2)___. "We were surprised to find that this ancestral source also contributed to the Japanese gene pool, especially the indigenous Ainus," says Li. ___(3)___. They shared similarities in how they crafted stemmed projectile points for arrowheads and spears. ___(4)___. "This suggests that the Pleistocene connection among the Americas, China, and Japan was not confined to culture but also to genetics," says senior author Qing-Peng Kong, an evolutionary geneticist at the Chinese Academy of Sciences.
1. Option 1   2. Option 2
3. Option 3   4. Option 4

17. 3

Sol.: **Option 1:** Placing the sentence at Option (1) would disrupt the chronological flow of the paragraph. It's important to first establish the genetic link and then explain its implications in terms of archaeological similarities.
Option 2: Similar to Option (1), placing the sentence at Option (2) would disrupt the flow. The paragraph needs to build up to the broader explanation of archaeological similarities.
Option 3 (Correct): This is the correct option. After discussing the genetic link between Native Americans and Japanese people, it makes sense to introduce the sentence about the discovery explaining archaeological similarities. This provides context and supports the idea that the genetic link is reflected in cultural and archaeological aspects.
Option 4: Placing the sentence at Option 4 would be too late in the paragraph. By this point, the connection between genetics and archaeological similarities has already been discussed, and the sentence would feel out of place.

18. There is a sentence that is missing in the paragraph below. Look at the paragraph and decide where (option 1, 2, 3, or 4) the following sentence would best fit.

Sentence: This philosophical cut at one's core beliefs, values, and way of life is difficult enough.

Paragraph: The experience of reading philosophy is often disquieting. When reading philosophy, the values around which one has heretofore organised one's life may come to look provincial, flatly wrong, or even evil. ___(1)___. When beliefs previously held as truths are rendered implausible, new beliefs, values, and ways of living may be required. ___(2)___. What's worse, philosophers admonish each other to remain unsutured until such time as a defensible new answer is revealed or constructed. Sometimes philosophical writing is even strictly critical in that it does not even attempt to provide an alternative after tearing down a cultural or conceptual citadel. ___(3)___. The reader of philosophy must be prepared for the possibility of this experience. While reading philosophy can help one clarify one's values, and even make one self-conscious for the first time of the fact that there are good reasons for believing what one believes, it can also generate unremediated doubt that is difficult to live with. ___(4)___.

1. Option 1   2. Option 2
3. Option 3   4. Option 4

18. 2

Sol.: Option 2 (Correct): Placing the sentence at Option 2 maintains the logical flow of the paragraph. It follows the introduction of the disquieting nature of reading philosophy and leads into the explanation of the challenges faced when beliefs are challenged and new beliefs may be required.
Option 1: Placing the sentence at Option (1) would disrupt the flow because it introduces the idea of a philosophical cut before explaining the disquieting nature of reading philosophy.
Option 3: Option (3) is too late in the paragraph to introduce the sentence. The discussion about the impact on beliefs and the need for new values has already been presented.
Option 4: Option (4) is after the paragraph has concluded, so it doesn't logically fit as the sentence to follow.

19. Five jumbled up sentences (labelled 1, 2, 3, 4 and 5), related to a topic, are given below. Four of them can be put together to form a coherent paragraph. Identify the odd sentence and key in the number of that sentence as your answer.
   1. Having an appreciation for the workings of another person's mind is considered a prerequisite for natural language acquisition, strategic social interaction, reflexive thought, and moral judgment.
   2. It is a 'theory of mind' though some scholars prefer to call it 'mentalizing' or 'mindreading', which is important for the development of one's cognitive abilities.
   3. Though we must speculate about its evolutionary origin, we do have indications that the capacity evolved sometime in the last few million years.
   4. This capacity develops from early beginnings in the first year of life to the adult's fast and often effortless understanding of others' thoughts, feelings, and intentions.
   5. One of the most fascinating human capacities is the ability to perceive and interpret other people's behaviour

19. 2

Sol.: The odd sentence in this set is Sentence 2. Here's the detailed solution:
   1. **Having an appreciation for the workings of another person's mind is considered a prerequisite for natural language acquisition, strategic social interaction, reflexive thought, and moral judgment.**
   This sentence discusses the importance of understanding others' minds in various aspects of human cognition and social interaction.
   2. **It is a 'theory of mind' though some scholars prefer to call it 'mentalizing' or 'mindreading', which is important for the development of one's cognitive abilities.**
   This sentence is more about terminology and the different ways scholars refer to the concept of understanding others' minds. It stands out as more focused on naming the concept rather than discussing its significance.

3. **Though we must speculate about its evolutionary origin, we do have indications that the capacity evolved sometime in the last few million years.**
   This sentence shifts the focus to the evolutionary aspect of the capacity to understand others' minds and indicates that there are speculations about its origin.
4. **This capacity develops from early beginnings in the first year of life to the adult's fast and often effortless understanding of others' thoughts, feelings, and intentions.**
   This sentence discusses the developmental aspect of the capacity to understand others' minds, from early childhood to adulthood.
5. **One of the most fascinating human capacities is the ability to perceive and interpret other people's behaviour in terms of their mental states.**
   This sentence emphasizes the fascination and importance of the human capacity to interpret others' behavior in terms of their mental states.
   Detailed Explanation:
   Sentence 2 is the odd one because it focuses on naming the concept ('theory of mind,' 'mentalizing,' or 'mindreading') without directly contributing to the discussion of the importance, development, or evolutionary aspect of understanding others' minds, which are the themes present in the other sentences. The other sentences provide information about the significance, development, and evolution of the capacity, making Sentence 2 stand out.

20. Five jumbled up sentences (labelled 1, 2, 3, 4 and 5), related to a topic, are given below. Four of them can be put together to form a coherent paragraph. Identify the odd sentence and key in the number of that sentence as your answer.
    1. In English, there is no systematic rule for the naming of numbers; after ten, we have "eleven" and "twelve" and then the teens: "thirteen", "fourteen", "fifteen" and so on.
    2. Even more confusingly, some English words invert the numbers they refer to: the word "fourteen" puts the four first, even though it appears last.
    3. It can take children a while to learn all these words, and understand that "fourteen" is different from "forty".
    4. For multiples of 10, English speakers switch to a different pattern: "twenty", "thirty", "forty" and so on.
    5. If you didn't know the word for "eleven", you would be unable to just guess it – you might come up with

20. 3

Sol.: The odd sentence in this set is Sentence 3. Here's the detailed solution:
1. **In English, there is no systematic rule for the naming of numbers; after ten, we have "eleven" and "twelve" and then the teens: "thirteen", "fourteen", "fifteen" and so on.**
   This sentence introduces the topic of English number naming, highlighting the lack of a systematic rule and providing examples.
2. **Even more confusingly, some English words invert the numbers they refer to: the word "fourteen" puts the four first, even though it appears last.**
   This sentence continues discussing the peculiarities of English number naming, focusing on the inversion of digits in the teens.
3. **It can take children a while to learn all these words, and understand that "fourteen" is different from "forty".**
   This sentence shifts the focus to the learning process of children, discussing the difficulty they may have in understanding these naming conventions.
4. **For multiples of 10, English speakers switch to a different pattern: "twenty", "thirty", "forty" and so on.**
   This sentence returns to discussing the structure of English number naming, specifically for multiples of 10, maintaining the original theme of peculiarities in naming conventions.

5. **If you didn't know the word for "eleven", you would be unable to just guess it – you might come up with something like "one-teen".**

This sentence provides a hypothetical scenario to illustrate the unpredictability of English number naming, staying in line with the theme of the other sentences.

Detailed Explanation: When we look at these sentences together, sentences 1, 2, 4, and 5 form a coherent paragraph about the complexity and lack of systematic rule in English number naming. Sentence 3, while related to the topic of number naming, shifts the focus to the learning difficulties faced by children, which is a different aspect compared to the other sentences that purely discuss the naming system itself. Therefore, sentence 3 is the odd one out as it introduces a new subtopic (learning difficulties) that is not directly in line with the main theme of the other sentences (peculiarities of the English number naming system).

21. The four sentences (labelled 1, 2, 3 and 4) given below, when properly sequenced, would yield a coherent paragraph. Decide on the proper sequencing of the order of the sentences and key in the sequence of the four numbers as your answer.
    1. What precisely are the "unusual elements" that make a particular case so attractive to a certain kind of audience?
    2. It might be a particularly savage or unfathomable level of depravity, very often it has something to do with the precise amount of mystery involved.
    3. Unsolved, and perhaps unsolvable cases offer something that "ordinary" murder doesn't.
    4. Why are some crimes destined for perpetual re-examination and others locked into permanent obscurity?

21. 4123

Sol.: Explanation: Sentence 4 is the best opening as it sets the context by asking why some crimes are constantly revisited. Sentence 1 follows, delving into the question of what makes these crimes attractive. Sentence 2 answers this by detailing the elements of a crime that garner interest, such as depravity and mystery. Sentence 3 concludes by highlighting the allure of unsolved cases.

Introductory Statement (4): This statement sets the stage by posing a broad, intriguing question about why certain crimes capture lasting attention while others fade into obscurity. It's an effective opener as it immediately engages the reader with a compelling question that sets the theme for the paragraph.

Flow of Thought:

4 to 1: After posing the general question, it naturally leads to a more specific inquiry about the elements that make certain cases appealing to audiences.

1 to 2: This sentence answers the question posed in Sentence 1 by explaining what these "unusual elements" might be, such as a high degree of depravity or the amount of mystery involved.

2 to 3: Building on the idea of mystery from Sentence 2, Sentence 3 elaborates on a particular type of case (unsolved or unsolvable) that exemplifies these elements, thus explaining why they are more fascinating than typical cases.

Incorrect Options:

Other sequences would not maintain the logical flow of introducing the topic, exploring the question, providing details, and then concluding with a specific aspect that makes certain crimes intriguing.

22. The four sentences (labelled 1, 2, 3 and 4) given below, when properly sequenced, would yield a coherent paragraph. Decide on the proper sequencing of the order of the sentences and key in the sequence of the four numbers as your answer.
    1. Algorithms hosted on the internet are accessed by many, so biases in AI models have resulted in much larger impact, adversely affecting far larger groups of people.
    2. Though "algorithmic bias" is the popular term, the foundation of such bias is not in algorithms, but in the data; algorithms are not biased, data is, as algorithms merely reflect persistent patterns that are present in the training data.
    3. Despite their widespread impact, it is relatively easier to fix AI biases than human-generated biases, as it is simpler to identify the former than to try to make people unlearn behaviors learnt over generations.
    4. The impact of biased decisions made by humans is localised and geographically confined, but with the advent of AI, the impact of such decisions is spread over a much wider scale.

22. 4123

Sol.: **Explanation:** Sentence 4 is the best opener as it establishes the context of the scale of impact due to AI. Sentence 1 follows, explaining the widespread access to algorithms on the internet and the resulting broader impact of biases. Sentence 2 delves deeper into the nature of this bias, clarifying that it originates from data, not algorithms. Sentence 3 concludes the paragraph by comparing the fixability of AI biases with human biases.

Introductory Statement (4): Sentence 4 introduces the concept of the scale and impact of human decision-making, contrasting the localized effect of human biases with the amplified, widespread impact in the era of AI. This is a suitable opening as it introduces the main theme of AI's influence on a global scale.

Flow of Thought:

4 to 1: After establishing the broad impact of AI, Sentence 1 dives into the specifics of how biases in AI models, due to their internet presence, affect a larger demographic, directly answering the "how" of the spread mentioned in Sentence 4.

1 to 2: Building on the mention of biases in AI models, Sentence 2 clarifies a crucial point: that the issue lies not in the algorithms themselves but in the biased data they are trained on, adding depth to the understanding of AI biases introduced in Sentence 1.

2 to 3: Following the explanation of the nature of AI bias, Sentence 3 compares the relative ease of addressing AI biases versus human biases, wrapping up the discussion with a perspective on the solution and management of these biases.

Incorrect Answers:

Other sequences would not logically progress from setting the context of AI's impact, explaining the nature of bias in AI, and then concluding with a comparison of AI and human biases in terms of fixability.

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

Colonialism is not a modern phenomenon. World history is full of examples of one society gradually expanding by incorporating adjacent territory and settling its people on newly conquered territory. In the sixteenth century, colonialism changed decisively because of technological developments in navigation that began to connect more remote parts of the world. The modern European colonial project emerged when it became possible to move large numbers of people across the ocean and to maintain political control in spite of geographical dispersion. The term colonialism is used to describe the process of European settlement, violent dispossession and political domination over the rest of the world, including the Americas,   Asia.

1. Colonialism surged in the 16th century due to advancements in navigation, enabling British settlements abroad and global dominance.
2. Technological advancements in navigation in the 16th century, transformed colonialism, enabling Europeans to establish settlements and exert political dominance over distant regions.
3. As a result of developments in navigation technology, European colonialism, led to the displacement of indigenous populations and global political changes in the 16th century.
4. Colonialism, conceptualized in the 16th century, allowed colonizers to expand their territories, establish

23. 2

Sol.: **Sentence 1:** "Colonialism is not a modern phenomenon."

Explanation: The sentence establishes that colonialism, the practice of acquiring full or partial control over another country and exploiting it economically, has been around for a long time and is not just a recent occurrence.

Sentence 2: "World history is full of examples of one society gradually expanding by incorporating adjacent territory and settling its people on newly conquered territory."

Explanation: This provides historical context, explaining that throughout world history, many societies have expanded their influence and control by taking over nearby lands and populating these areas with their own citizens.

Sentence 3: "In the sixteenth century, colonialism changed decisively because of technological developments in navigation that began to connect more remote parts of the world."

Explanation: This highlights a turning point in the history of colonialism during the 16th century. The advancements in navigation technology allowed societies, particularly European ones, to reach and colonize more distant parts of the world than before.

Sentence 4: "The modern European colonial project emerged when it became possible to move large numbers of people across the ocean and to maintain political control in spite of geographical dispersion."

Explanation: This sentence explains how the ability to transport many people across oceans and retain political control over far-flung territories marked the beginning of modern European colonialism.

Sentence 5: "The term colonialism is used to describe the process of European settlement, violent dispossession and political domination over the rest of the world, including the Americas, Australia, and parts of Africa and Asia."

Explanation: This sentence defines colonialism in a more detailed way, describing it as a process involving European settlement and the forceful taking over and political control of various regions around the world.

Passage Summary: The passage describes how colonialism, while not a modern phenomenon, underwent a significant change in the 16th century due to advancements in navigation. These technological developments enabled Europeans to establish settlements and exercise political dominance over distant regions.

Option Analysis:

1. **Colonialism surged in the 16th century due to advancements in navigation, enabling British settlements abroad and global dominance.**
   Incorrect: This option incorrectly attributes colonialism primarily to the British and doesn't mention the broader European context or the consequences like violent dispossession and political domination mentioned in the passage.

2. **Technological advancements in navigation in the 16th century, transformed colonialism, enabling Europeans to establish settlements and exert political dominance over distant regions.**
   Correct: This option accurately captures the essence of the passage, emphasizing the transformation of colonialism in the 16th century due to navigation advancements, and the resultant European settlements and political dominance.

3. **As a result of developments in navigation technology, European colonialism led to the displacement of indigenous populations and global political changes in the 16th century.**
   Incorrect: While this option touches upon the displacement of indigenous populations, it does not fully capture the passage's emphasis on the transformation of colonialism due to technological developments in navigation.

4. **Colonialism, conceptualized in the 16th century, allowed colonizers to expand their territories, establish settlements, and exercise political power.**
   Incorrect: This option implies that colonialism was conceptualized in the 16th century, which contradicts the passage's statement that colonialism existed before but changed in the 16th century.

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

Manipulating information was a feature of history long before modern journalism established rules of integrity. A record dates back to ancient Rome, when Antony met Cleopatra and his political enemy Octavian launched a smear campaign against him with "short, sharp slogans written upon coins." The perpetrator became the first Roman Emperor and "fake news had allowed Octavian to hack the republican system once and for all". But the 21st century has seen the weaponization of information on an unprecedented scale. Powerful new technology makes the fabrication of content simple, and social networks amplify falsehoods peddled by States, populist politicians, and dishonest corporate entities. The platforms have become fertile ground for computational propaganda, 'trolling' and 'troll armies'.

1. Octavian used fake news to manipulate people and attain power and influence, just as people do today.
2. Disinformation, which is mediated by technology today, is not new and has existed since ancient times.
3. People need to become critical of what they read, since historically, weaponization of information has led to corruption.
4. Use of misinformation for attaining power, a practice that is as old as the Octavian era, is currently fueled by technology.

24. 4

Sol.: Sentence Analysis

Sentence 1: Manipulating information was a feature of history long before modern journalism established rules of integrity.

Explanation: Historical Precedence of Information Manipulation: The passage opens by establishing that manipulating information is not a new phenomenon and has been a part of history well before the establishment of modern journalism ethics.

Sentence 2: A record dates back to ancient Rome, when Antony met Cleopatra and his political enemy Octavian launched a smear campaign against him with "short, sharp slogans written upon coins."

Explanation: Octavian's Campaign in Ancient Rome: This sentence gives a specific historical example: Octavian's smear campaign against Antony in ancient Rome, using coins to spread his message. This illustrates an early form of 'fake news' or disinformation for political gain.

Sentence 3: The perpetrator became the first Roman Emperor and "fake news had allowed Octavian to hack the republican system once and for all".

Explanation: Octavian's Success and the Impact of Fake News: It highlights the consequences of Octavian's campaign, leading to his rise as the first Roman Emperor, suggesting the effectiveness of misinformation in achieving political power.

Sentence 4: But the 21st century has seen the weaponization of information on an unprecedented scale.

Explanation: Modern Era and the Escalation of Information Weaponization: The passage then transitions to the present day, emphasizing that the scale of information manipulation has grown significantly, especially with the advent of new technology.

Sentence 5: Powerful new technology makes the fabrication of content simple, and social networks amplify falsehoods peddled by States, populist politicians, and dishonest corporate entities.

Explanation: Technology's Role in Misinformation: This sentence highlights how modern technology simplifies content fabrication and how social networks amplify falsehoods from various entities, indicating the increased complexity and reach of modern misinformation.

Sentence 6: The platforms have become fertile ground for computational propaganda, 'trolling' and 'troll armies'.

Explanation: Contemporary Challenges of Computational Propaganda: The passage concludes by noting that today's platforms are rife with computational propaganda, trolling, and troll armies, suggesting a more organized and widespread nature of misinformation in the digital age.

Option Analysis

1. **Octavian used fake news to manipulate people and attain power and influence, just as people do today.**

   This option focuses on the parallel between Octavian's use of fake news and current practices. However, it doesn't capture the passage's emphasis on the escalated scale and technological influence of modern misinformation.

2. **Disinformation, which is mediated by technology today, is not new and has existed since ancient times.**

   While acknowledging the historical continuity of disinformation, this option misses out on highlighting the transformative role of technology in the current era of misinformation, which is a key theme in the passage.

3. **People need to become critical of what they read, since historically, weaponization of information has led to corruption.**

   This option introduces a new idea about the need for critical reading, which is not explicitly mentioned in the passage. It focuses more on the reaction of people to misinformation rather than the evolution and scale of misinformation itself.

4. **Use of misinformation for attaining power, a practice that is as old as the Octavian era, is currently fueled by technology.**

   This option effectively encapsulates the passage's main ideas. It acknowledges the historical practice of using misinformation for power (dating back to Octavian's era) and crucially highlights the role of technology in fueling this practice in the modern era, aligning with the passage's emphasis on the evolution and increased scale of misinformation.

Conclusion

Option 4 is the correct summary because it captures the passage's central themes: the historical use of misinformation as a political tool, its continuity into the modern era, and the significant role of technology in enhancing and expanding the reach and effectiveness of misinformation practices. The other options, while touching on aspects of the passage, do not provide as comprehensive and focused a summary as Option 4.

Section II: DI & LR

Question Numbers (1 to 5): The schematic diagram below shows 12 rectangular houses in a housing complex. House numbers are mentioned in the rectangles representing the houses. The houses are located in six columns – Column-A through Column-F, and two rows – Row-1 and Row-2. The houses are divided into two blocks - Block XX and Block YY. The diagram also shows two roads, one passing in front of the houses in Row-2 and another between the two blocks.
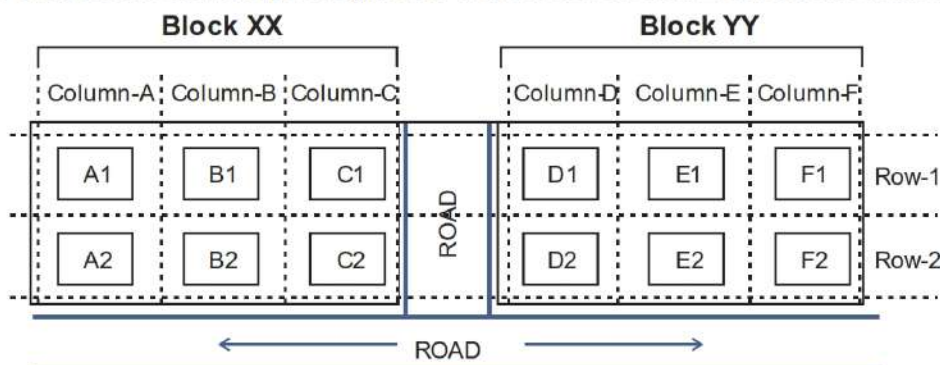
Some of the houses are occupied. The remaining ones are vacant and are the only ones available for sale.

The road adjacency value of a house is the number of its sides adjacent to a road. For example, the road adjacency values of C2, F2, and B1 are 2, 1, and 0, respectively. The neighbour count of a house is the number of sides of that house adjacent to occupied houses in the same block. For example, E1 and C1 can have the maximum possible neighbour counts of 3 and 2, respectively.

The base price of a vacant house is Rs. 10 lakhs if the house does not have a parking space, and Rs. 12 lakhs if it does. The quoted price (in lakhs of Rs.) of a vacant house is calculated as (base price) + 5 × (road adjacency value) + 3 × (neighbour count).

The following information is also known.
1. The maximum quoted price of a house in Block XX is Rs. 24 lakhs. The minimum quoted price of a house in block YY is Rs. 15 lakhs, and one such house is in Column-E.
2. Row-1 has two occupied houses, one in each block.
3. Both houses in Column-E are vacant. Each of Column-D and Column-F has at least one occupied house.
4. There is only one house with parking space in Block YY.

1. How many houses are vacant in Block XX?

2. Which of the following houses is definitely occupied?
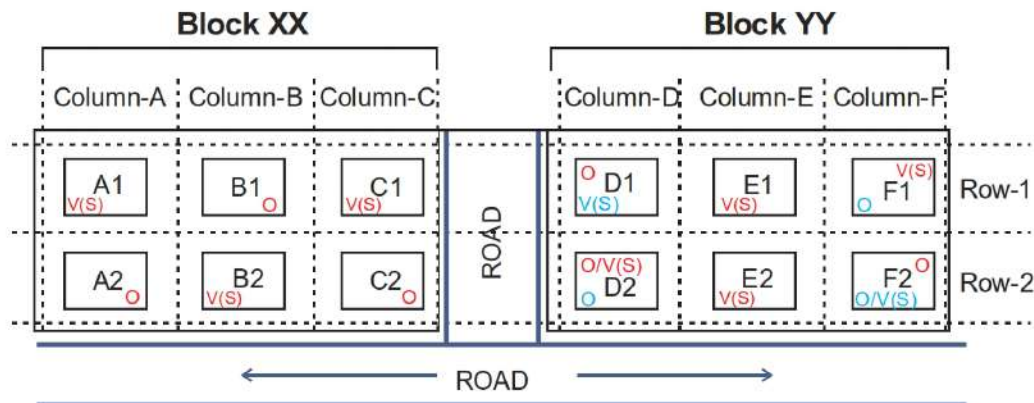   1. B1   2. A1
   3. D2   4. F2

3. Which of the following options best describes the number of vacant houses in Row-2?
   1. Exactly 3   2. Either 2 or 3
   3. Either 3 or 4   4. Exactly 2

4. What is the maximum possible quoted price (in lakhs of Rs.) for a vacant house in Column-E?

5. Which house in Block YY has parking space?
   1. E1   2. F1
   3. F2   4. E2

Sol.: For questions 1 to 5:
Step 1:

Quoted Price (in lakhs of Rs.) = Base Price + 5 × (Road adjacency value) + 3(Neighbor count)

$\Rightarrow$ QP = 10/12 + 5(0, 1, 2) + 3(0, 1, 2, 3)

From conditions (1) and (2),

24 = 10 + 5 × 1 + 3 × 3

15 = 10 + 5 × 1 + 3 × 0 or 15 = 12 + 5 × 0 + 3 × 1

In block XX, B2 have the maximum Quoted Price Rs.24 lakhs. So B1, A2 and C2 are occupied and remaining A1, B2 and C1 are vacant i.e., on sale.

Step 2:

From condition (3), E1 and E2 are vacant.

From conditions (2) and (3), either D1 or F1 is occupied.

So Quoted Price of E1 = 15 = 12 + 5 × 0 + 3 × 1

So from condition (4), only E1 has parking space in block YY.

From condition (3), Each of Column-D and Column-F has at least one occupied house.

If D1 is occupied, then F2 is occupied and D2 is either vacant or occupied. If F1 is occupied, then D2 is occupied and F2 is either vacant or occupied.

1. 3 Three houses A1, C1 and B2 are vacant in Block XX.

2. 1 House B1 is definitely occupied.

3. 2 The number of vacant houses in Row-2 is either 2 or 3.

4. 21 The maximum possible quoted price for a vacant house i.e., E2 in Column-E = 10 + 5 × 1 + 3 × 2 = Rs.21 lakhs.

5. 1 House E1 in Block YY has parking space.

Question Numbers (6 to 10): Faculty members in a management school can belong to one of four departments – Finance and Accounting (F&A), Marketing and Strategy (M&S), Operations and Quants (O&Q) and Behaviour and Human Resources (B&H). The numbers of faculty members in F&A, M&S, O&Q and B&H departments are 9, 7, 5 and 3 respectively.

Prof. Pakrasi, Prof. Qureshi, Prof. Ramaswamy and Prof. Samuel are four members of the school's faculty who were candidates for the post of the Dean of the school. Only one of the candidates was from O&Q.

Every faculty member, including the four candidates, voted for the post. In each department, all the faculty members who were not candidates voted for the same candidate. The rules for the election are listed below.

1. There cannot be more than two candidates from a single department.
2. A candidate cannot vote for himself/herself.
3. Faculty members cannot vote for a candidate from their own department.

After the election, it was observed that Prof. Pakrasi received 3 votes, Prof. Qureshi received 14 votes, Prof. Ramaswamy received 6 votes and Prof. Samuel received 1 vote. Prof. Pakrasi voted for Prof. Ramaswamy, Prof. Qureshi for Prof. Samuel, Prof. Ramaswamy for Prof. Qureshi and Prof. Samuel for Prof. Pakrasi.

6. Which two candidates can belong to the same department?
   1. Prof. Pakrasi and Prof. Samuel
   2. Prof. Pakrasi and Prof. Qureshi
   3. Prof. Qureshi and Prof. Ramaswamy
   4. Prof. Ramaswamy and Prof. Samuel

7. Which of the following can be the number of votes that Prof. Qureshi received from a single department?
   1. 7
   2. 9
   3. 8
   4. 6

8. If Prof. Samuel belongs to B&H, which of the following statements is/are true?
   Statement A: Prof. Pakrasi belongs to M&S.
   Statement B: Prof. Ramaswamy belongs to O&Q.
   1. Neither statement A nor statement B
   2. Both statements A and B
   3. Only statement A
   4. Only statement B

9. What best can be concluded about the candidate from O&Q?
   1. It was either Prof. Pakrasi or Prof. Qureshi.
   2. It was either Prof. Ramaswamy or Prof. Samuel.
   3. It was Prof. Samuel.
   4. It was Prof. Ramaswamy.

10. Which of the following statements is/are true?
    Statement A: Non-candidates from M&S voted for Prof. Qureshi.
    Statement B: Non-candidates from F&A voted for Prof. Qureshi.
    1. Only statement A
    2. Neither statement A nor statement B
    3. Both statements A and B
    4. Only statement B

Sol.: For questions 6 to 10:
Step 1:
From the given information and conditions (1) to (3),
P received 3 votes. S voted for P. So P received 2 votes from B & H. So P cannot be from B & H and there is 1 candidate from B & H. Q received 14 votes. R voted for Q. So Q received 9 votes from F & A and 4 votes from O & Q. So Q cannot be from F & A and O & Q. So there is no candidate from F & A and 1 candidate from O & Q. Hence, there are 2 candidates from M & S.
Since S voted for P. So P and S cannot be from the same department. R voted for Q. So Q and R cannot be from the same department. Similarly, R and P cannot be from the same department and; Q and S cannot be from the same department.
Hence, P and Q can be from M & S department. Q and S can be from B & H and O & Q departments in any order.
Step 2:
The information can be shown in the tables given below.

Votes received by the candidate	Votes by		
	Candidate	Members	
P (3)	S	2	B & H (2)
Q (14)	R	13	F & A (9) + O & Q (4)
R (6)	P	5	M & S (5)
S (1)	Q	0	

Department	Total Faculties	Members	Candidates
F & A	9	9	
M & S	7	5	P, Q
O & Q	5	4	R, S
B & H	3	2	

6. 2 Prof. Pakrasi and Prof. Qureshi can belong to the same department M & S.

7. 2 Nine can be the number of votes that Prof. Qureshi received from a single department.

8. 2 Both statements are true.

9. 2 Either Prof. Ramaswamy or Prof. Samuel was from O & Q.

10. 4 Only statement B is true.

Question Numbers (11 to 15): A visa processing office (VPO) accepts visa applications in four categories – US, UK, Schengen, and Others. The applications are scheduled for processing in twenty 15-minute slots starting at 9:00 am and ending at 2:00 pm. Ten applications are scheduled in each slot.

There are ten counters in the office, four dedicated to US applications, and two each for UK applications, Schengen applications and Others applications. Applicants are called in for processing sequentially on a first-come-first-served basis whenever a counter gets freed for their category. The processing time for an application is the same within each category. But it may vary across the categories. Each US and UK application requires 10 minutes of processing time. Depending on the number of applications in a category and time required to process an application for that category, it is possible that an applicant for a slot may be processed later.

On a particular day, Ira, Vijay and Nandini were scheduled for Schengen visa processing in that order. They had a 9:15 am slot but entered the VPO at 9:20 am. When they entered the office, exactly six out of the ten counters were either processing applications, or had finished processing one and ready to start processing the next.

Mahira and Osman were scheduled in the 9:30 am slot on that day for visa processing in the Others category.

The following additional information is known about that day.
1. All slots were full.
2. The number of US applications was the same in all the slots. The same was true for the other three categories.
3. 50% of the applications were US applications.
4. All applicants except Ira, Vijay and Nandini arrived on time.
5. Vijay was called to a counter at 9:25 am.

11. How many UK applications were scheduled on that day?

12. What is the maximum possible value of the total time (in minutes, nearest to its integer value) required to process all applications in the Others category on that day?

13. Which of the following is the closest to the time when Nandini's application process got over?
1. 9:35 am
2. 9:37 am
3. 9:45 am
4. 9:50 am

14. Which of the following statements is false?
1. The application process of Mahira was completed before Nandini's.
2. The application process of Osman was completed before Vijay's.
3. The application process of Mahira started after Nandini's.
4. The application process of Osman was completed before 9:45 am.

15. When did the application processing for all US applicants get over on that day?
1. 2:00 pm
2. 2:05 pm
3. 2:25 pm
4. 3:40 pm

Sol.: For questions 11 to 15:
Step 1:
There are 20 slots of 15 minutes each from 9:00 AM to 2:00 PM. There are ten counters in the VPO.
From the given information and condition (1), Total number of applications scheduled = 10 × 20 = 200
From condition (3), Number of US applications = 100. Number of application for rest 3 categories = 100.
From condition (2), Number of US applications for each slot = 100/20 = 5. Similarly, number of applications of rest 3 categories for each slot = 100/20 = 5.
The processing time for an application is the same within each category. But it may vary across the categories. Depending on the number of applications in a category and time required to process an application for that category, it is possible that an applicant for a slot may be processed later.
The information can be shown in the table below.

Counters (Total 10)	US (4)	UK (2)	Schengen (2)	Others (2)
Processing time (in minutes)	10	10	?	?

Step 2:
On a particular day, Ira, Vijay and Nandini were scheduled for Schengen visa processing in that order. They had a 9:15 AM slot but entered the VPO at 9:20 AM i.e., they had delayed by 5 minutes.
So at least 3 people were scheduled for each slot for a Schengen visa.
Mahira and Osman were scheduled in the 9:30 AM slot on that day for visa processing in the Others category.
So at least 2 people were scheduled for each slot for an Others category visa.

11. 0 Total applications on that day = 200
US applications = 100
So there are 5 applications of US out of total 10 in one time slot.
There were 3 applications of Schengen and 2 applications of Others in 1 time slot.
Hence, there are 0 applications of UK in one time slot.

12. 200

Others	Counter 1	Counter 2
	9 to ... (1)	9 to ... (2)
	9 : 15 to Max 9 : 20 (3)	9 : 15 to Max 9 : 20 (3)
	9 : 30 to Max 9 : 35 (Mahira)	9 : 30 to Max 9 : 35 (Osman)

The maximum possible time for Others category for 1 slot in 5 minutes.
Hence, total time = 2 × 5 × 20 = 200 minutes.

13. 3

Schengen	Counter 1	Counter 2
	9 : 00 AM to 9 : 12 : 30 AM (1)	9 : 00 AM to 9 : 12 : 30 AM (2)
	9 : 12 : 30 AM to 9 : 25 AM (3)	9 : 20 AM to 9 : 32 : 30 AM (Ira)
	9 : 25 AM to 9 : 37 : 30 AM (Vijay)	9 : 32 : 30 AM to 9 : 45 AM (Nandini)

Hence, 9:45 AM is the closest to the time when Nandini's application process got over.

14.3

Schengen	Counter 1	Counter 2
	9 : 00 AM to 9 : 12 : 30 AM (1)	9 : 00 AM to 9 : 12 : 30 AM (2)
	9 : 12 : 30 AM to 9 : 25 AM (3)	9 : 20 AM to 9 : 32 : 30 AM (Ira)
	9 : 25 AM to 9 : 37 : 30 AM (Vijay)	9 : 32 : 30 AM to 9 : 45 AM (Nandini)

Others	Counter 1	Counter 2
	9 to ... (1)	9 to ... (2)
	9 : 15 to Max 9 : 20 (3)	9 : 15 to Max 9 : 20 (3)
	9 : 30 to Max 9 : 35 (Mahira)	9 : 30 to Max 9 : 35 (Osman)

Hence, the statement given in option (3) false.

15.2

US	Counter 1	Counter 2	Counter 3	Counter 4
	9 to 9 : 10 (1)	9 to 9 : 10 (2)	9 to 9 : 10 (3)	9 to 9 : 10 (4)
	9 : 10 to 9 : 20 (5)	9 : 15 to 9 : 25 (6)	9 : 15 to 9 : 25 (7)	9 : 15 to 9 : 25 (8)
	9 : 20 to 9 : 30 (9)	9 : 25 to 9 : 35 (10)	9 : 30 to 9 : 40 (11)	9 : 30 to 9 : 40 (12)
	9 : 30 to 9 : 40 (13)	9 : 35 to 9 : 45 (14)	9 : 40 to 9 : 50 (15)	... ...

The first 5 applications were process in 20 minutes, and then every next 5 applications were process in 15 minutes. So the total time taken for all the application processes was = 20 + 15 × 19 = 305 minutes. Hence, the application processing for all US applicants get over on that day was 2:05 PM.

Question Numbers (16 to 20): Five restaurants, coded R1, R2, R3, R4 and R5 gave integer ratings to five gig workers – Ullas, Vasu, Waman, Xavier and Yusuf, on a scale of 1 to 5.

The means of the ratings given by R1, R2, R3, R4 and R5 were 3.4, 2.2, 3.8, 2.8 and 3.4 respectively.

The summary statistics of these ratings for the five workers is given below.

	Ullas	Vasu	Waman	Xavier	Yusuf
Mean rating	2.2	3.8	3.4	3.6	2.6
Median rating	2	4	4	4	3
Modal rating	2	4	5	5	1 and 4
Range of rating*	3	3	4	4	3

* Range of ratings is defined as the difference between the maximum and minimum ratings awarded to a worker.

The following is partial information about ratings of 1 and 5 awarded by the restaurants to the workers.
(a)   R1 awarded a rating of 5 to Waman, as did R2 to Xavier, R3 to Waman and Xavier, and R5 to Vasu.
(b)   R1 awarded a rating of 1 to Ullas, as did R2 to Waman and Yusuf, and R3 to Yusuf.

16.   How many individual ratings cannot be determined from the above information?

17.   To how many workers did R2 give a rating of 4?

18.   What rating did R1 give to Xavier?

19.   What is the median of the ratings given by R3 to the five workers?

20. Which among the following restaurants gave its median rating to exactly one of the workers?

1. R4
2. R5
3. R3
4. R2

Sol.: For questions 16 to 20:

Step 1:

Mean rating of Ullas is 2.2. So his total rating = 2.2 × 5 = 11.

Since his median rating is 2.

So his middle most rating is 2.

Since his mode rating is 2. So his one more rating is 2.

Since his range of rating is 3. So his two ratings are 1 and 5 or 2 and 5 or 1 and 4.

Hence, only possible ratings of Ullas is (1, 2, 2, 2, 4).

Mean rating of Vasu is 3.8. So his total rating is 3.8 × 5 = 19. His median rating is 4. So his middle most rating is 4. His mode rating is 4. So his one more rating is 4.

Since range of rating is 3. So only possible ratings of Vasu is (2, 4, 4, 4, 5).

Similarly, possible ratings of Waman, Xavier and Yusuf are (1, 2, 4, 5, 5), (1, 3, 4, 5, 5) and (1, 1, 3, 4, 4) respectively.

The information can be shown in the table below.

	Rating 1	Rating 2	Rating 3	Rating 4	Rating 5	Total
Ullas	1	2	2	2	4	11
Vasu	2	4	4	4	5	19
Waman	1	2	4	5	5	17
Xavier	1	3	4	5	5	18
Yusuf	1	1	3	4	4	13

Step 2:

The means of the ratings given by R1, R2, R3, R4 and R5 were 3.4, 2.2, 3.8, 2.8 and 3.4 respectively.

So total of the ratings given by R1, R2, R3, R4 and R5 were 17, 11, 19, 14 and 17 respectively.

From conditions (a) and (b),

	R1	R2	R3	R4	R5	Ratings	Total
Ullas	1					1, 2, 2, 2, 4	11
Vasu					5	2, 4, 4, 4, 5	19
Waman	5	1	5			1, 2, 4, 5, 5	17
Xavier		5	5			1, 3, 4, 5, 5	18
Yusuf		1	1			1, 1, 3, 4, 4	13
Total	17	11	19	14	17		

Since total of the ratings given by R2 is 11. So ratings given by R2 to Ullas and Vasu are 2 and 2.

Since total of the ratings given by R3 is 19. So ratings given by R3 to Ullas and Vasu are 4 and 4.

Similarly, we can fill the remaining rating in the table below.

	R1	R2	R3	R4	R5	Ratings	Total
Ullas	1	2	4	2	2	1, 2, 2, 2, 4	11
Vasu	4	2	4	4	5	2, 4, 4, 4, 5	19
Waman	5	1	5	4	2	1, 2, 4, 5, 5	17
Xavier	3	5	5	1	4	1, 3, 4, 5, 5	18
Yusuf	4	1	1	3	4	1, 1, 3, 4, 4	13
Total	17	11	19	14	17		

16. 0 All individual ratings can be determined from the given information. Hence, the answer is 0.

17. 0 R2 did not give a rating of 4 to any workers.

18. 3 R1 gave a rating of 3 to Xavier.

19. 4 The median of the ratings given by R3 to the five workers is 4.

20. 1 Restaurant R4 gave its median rating to exactly one of the workers.

1. If x and y are real numbers such that $x^2 + (x - 2y - 1)^2 = -4y(x + y)$, then the value $x - 2y$ is

    1. –1   2. 0

    3. 1   4. 2

1. 3

Sol.: $x^2 + (x - 2y - 1)^2 = -4y(x + y)$

    $\Rightarrow (x^2 + 4xy + 4y^2) + (x - 2y - 1)^2 = 0$

    $\Rightarrow (x + 2y)^2 + (x - 2y - 1)^2 = 0$

    So $x + 2y = 0$ and $x - 2y - 1 = 0$

    Hence, $x - 2y = 1$.

2. If x and y are positive real numbers such that $\log_x(x^2 \quad\quad {}_y x = 1$, then x + y equals

    1. 11   2. 10

    3. 68   4. 20

2. 2

Sol.: $\log_x(x^2 + 12) = 4$

    $\Rightarrow x^2 + 12 = x^4$

    $\Rightarrow x^4 - 12 - x^2 = 0$

    $\Rightarrow (x^2 - 4)(x^2 + 3) = 0$

    So $x^2 = 4$ $(x^2 \neq -3)$

    $\Rightarrow x = 2$ $(x \neq -2)$

    $3\log_y x = 1 \Rightarrow \log_y 2 = \dfrac{1}{3}$

    $\Rightarrow y^{\frac{1}{3}} = 2 \Rightarrow y = 8$

    Hence, $x + y = 2 + 8 = 10$.

3. If $\sqrt{5x + 9} + \sqrt{5x - 9} = 3(2 + \sqrt{2})$, then $\sqrt{10x + 9}$ is equal to

    1. $2\sqrt{7}$ 2. $3\sqrt{7}$

    3. $4\sqrt{5}$ 4. $3\sqrt{31}$

3. 2

Sol.: $\sqrt{5x + 9} + \sqrt{5x - 9} = 3(2 + \sqrt{2}) = 6 + 3\sqrt{2}$

    $\Rightarrow \sqrt{5x + 9} + \sqrt{5x - 9} = \sqrt{36} + \sqrt{18}$

    So $5x + 9 = 36$

    $\Rightarrow 5x = 27 \Rightarrow 10x = 54$

    Hence, $\sqrt{10x + 9} = \sqrt{54 + 9} = 3\sqrt{7}$.

4. Let n be the least positive integer such that 168 is a factor of 1134^n. If m is the least positive integer such that 1134^n is a factor of 168^m, then m + n equals

   1. 15   2. 9

   3. 24   4. 12

4. 1

Sol.: $1134 = 2 \times 3^4 \times 7$

       $168 = 2^3 \times 3 \times 7$

       So $(1134)^n / 168 \Rightarrow n = 3$

       And $(168)^m / (1134)^3 \Rightarrow m = 12$

       Where m and n both are least positive integers.

       Hence, m + n = 12 + 3 = 15.

5. Let α and β be the two distinct roots of the equation $2x^2 - 6x + k = 0$, such that $(\alpha + \beta)$ and $\alpha\beta$ are the distinct roots of the equation $x^2 + px + p = 0$. Then, the value of $8(k - p)$ is

5. 6

Sol.: $\alpha + \beta = -\left(-\dfrac{6}{2}\right) = 3$ and $\alpha\beta = \dfrac{k}{2}$

       $\alpha + \beta + \alpha\beta = -p$

       $\Rightarrow 3 + \dfrac{k}{2} = -p$ ... (i)

       $(\alpha + \beta)\alpha\beta = p$

       $\Rightarrow 3 \times \dfrac{k}{2} = p$ ... (ii)

       From (i) and (ii),

       $\Rightarrow \dfrac{6 + k}{2} = -\dfrac{3k}{2}$

       $\Rightarrow k = -\dfrac{3}{2}$ and $p = -\dfrac{9}{4}$

       Hence, $8(k - p) = 8\left(-\dfrac{3}{2} + \dfrac{9}{4}\right) = 6.$

6. The equation $x^3 + (2r + 1)x^2 + (4r - 1)x + 2 = 0$ has –2 as one of the roots. If the other two roots are real, then the minimum possible non-negative integer value of r is

6. 2

Sol.: Let α, β and –2 be the roots of the equation.

       Then, $\alpha + \beta + (-2) = -(2r + 1)$

       $\Rightarrow \alpha + \beta = -2r + 1$ ... (i)

       And $\alpha\beta(-2) = -2$

       $\Rightarrow \alpha = \dfrac{1}{\beta}$ ... (ii)

From (i) and (ii),

$$\Rightarrow \alpha + \frac{1}{\alpha} = -2r + 1$$

$$\Rightarrow \alpha^2 + (2r - 1)\alpha + 1 = 0$$

Since the other two roots are real.

So $(2r - 1)^2 - 4 \geq 0 \Rightarrow (2r - 1)^2 \geq 4$

$2r - 1 \leq -2$ or $2r - 1 \geq 2$

$$\Rightarrow r \leq -\frac{1}{2} \text{ or } r \geq \frac{3}{2}$$

Hence, the minimum possible non-negative integer r = 2.

7.   The number of integer solutions of equation $2|x|(x^2 + 1) = 5x^2$ is

7. 3

Sol.: $2|x|(x^2 + 1) = 5x^2$
Case 1: $2x(x^2 + 1) = 5x^2$
$\Rightarrow 2x^3 + 2x = 5x^2$
$\Rightarrow x(2x^2 - 5x + 2) = 0$
$\Rightarrow x(2x - 1)(x - 2) = 0$
So x = 0, x = 1/2, or x = 2
Case 2: $- 2x(x^2 + 1) = 5x^2$
$\Rightarrow - 2x^3 - 2x = 5x^2$
$\Rightarrow x(2x^2 + 5x + 2) = 0$
$\Rightarrow x(2x + 1)(x + 2) = 0$
So x = 0, x = -1/2 or x = - 2
Hence, the number of integer solutions is 3 (i.e., - 2, 0 and 2).

8.   The minor angle between the hours hand and minutes hand of a clock was observed at 8:48 am. The minimum duration, in minutes, after 8:48 am when this angle increases by 50% is
1.   24/11   2. 4
3.   2   4. 36/11

8. 1

Sol.: The angle moved by hour hand in 8 hours = 30° × 8 = 240°
Angle difference in 1 minute between hour hand and minute hand = (11/2)°
Angle difference in 48 minutes between hour hand and minute hand
48 × (11/2)° = 264°
So minor angle between them = 264° – 240° = 24°
50% of 24° = 12°
Hence, 12° will increase in 12/(11/2) = 24/11 minutes.

9.   The salaries of three friends Sita, Gita and Mita are initially in the ratio 5 : 6 : 7, respectively. In the first year, they get salary hikes of 20%, 25% and 20%, respectively. In the second year, Sita and Mita get salary hikes of 40% and 25%, respectively, and the salary of Gita becomes equal to the mean salary of the three friends. The salary hike of Gita in the second year is
1.   26%   2. 28%
3.   30%   4. 25%

9. 1

Sol.: Let the initial salaries of Sita, Gita and Mita be 5x, 6x and 7x respectively.
Then, in first year their salaries will be 5x × 1.2, 6x × 1.25 and 7x × 1.2 i.e., 6x, 7.5x and 8.4x respectively.
In second year salaries of Sita and Mita will be 6x × 1.4 and 8.4x × 1.25 i.e., 8.4x and 10.5x respectively.
In second year, salary of Gita = (8.4x + 10.5x)/2 = 9.45x
Hence, in second year the percentage increase in salary of Gita = (9.45x – 7.5x)/7.5x × 100 = 26%.

10. A mixture P is formed by removing a certain amount of coffee from a coffee jar and replacing the same amount with cocoa powder. The same amount is again removed from mixture P and replaced with same amount of cocoa powder to form a new mixture Q. If the ratio of coffee and cocoa in the mixture Q is 16 : 9, then the ratio of cocoa in mixture P to that in mixture Q is

1. 4 : 9   2. 1 : 3
3. 1 : 2   4. 5 : 9

10. 4

Sol.: Let the initial amount of coffee be x and y be the replacing amount with cocoa.

Then, $\left(\dfrac{x-y}{x}\right)^2 = \dfrac{16}{16+9}$

$\Rightarrow \dfrac{x-y}{x} = \dfrac{4}{5}$

$\Rightarrow y = x/5$

So amount of cocoa in in mixture P = x/5
Now, let z be the replacing amount of mixture P.

Then, $\dfrac{\dfrac{4x}{5} - z}{\dfrac{x}{5} + z} = \dfrac{16}{9}$

$\Rightarrow z = 4x/25$
So cocoa in mixture Q = x/5 + 4x/25 = 9x/25
Hence, required ratio = x/5 : 9x/25 = 5 : 9.

11. Brishti went on an 8-hour trip in a car. Before the trip, the car had travelled a total of x km till then, where x is a whole number and is palindromic, i.e., x remains unchanged when its digits are reversed. At the end of the trip, the car had travelled a total of 26862 km till then, this number again being palindromic. If Brishti never drove at more than 110 km/h, then the greatest possible average speed at which she drove during the trip, in km/h, was

1. 110   2. 100
3. 80   4. 90

11. 2

Sol.: From options:
Option (1): 26862 – 8 × 110 = 25982 (Not possible)
Option (2): 26862 – 8 × 100 = 26062 (Possible)
Since we have to find greatest possible average speed, so we can leave option (3) and option (4).
Hence, the required greatest possible average speed is 100 km/h.

12. In an examination, the average marks of 4 girls and 6 boys is 24. Each of the girls has the same marks while each of the boys has the same marks. If the marks of any girl is at most double the marks of any boy, but not less than the marks of any boy, then the number of possible distinct integer values of the total marks of 2 girls and 6 boys is

1. 22
2. 19
3. 21
4. 20

12. 3

Sol.: Let g and b be marks of a girl and a boys respectively.
Then, $4g + 6b = 240$
$\Rightarrow 2g + 3b = 120$ ... (i)
$g = 2b$ or $g = b$ ... (ii)
If $g = 2b$, then $7b = 120 \Rightarrow b = 120/7$
So $2g + 6b = 10b = 1200/7 = 17.42851$
If $g = b$, then $5b = 120 \Rightarrow b = 24$
So $2g + 6b = 8b = 8 \times 24 = 192$
Hence, integer values from 172 to 192 is 21.

13. Gita sells two objects A and B at the same price such that she makes a profit of 20% on object A and a loss of 10% on object B. If she increases the selling price such that objects A and B are still sold at an equal price and a profit of 10% is made on object B, then the profit made on object A will be nearest to

1. 45%
2. 42%
3. 47%
4. 49%

13. 3

Sol.: Let the cost price of objects A and B be a and b respectively.
Then, $1.2a = 0.9b$
$\Rightarrow a = 0.75b$
Selling price of object B at a profit of 10% = 1.1b
So selling price of object A = 1.1b
Hence, required profit percentage = $(1.1b - 0.75b)/0.75b \times 100 \approx 47\%$.

14. The amount of job that Amal, Sunil and Kamal can individually do in a day, are in harmonic progression. Kamal takes twice as much time as Amal to do the same amount of job. If Amal and Sunil work for 4 days and 9 days, respectively, Kamal needs to work for 16 days to finish the remaining job. Then the number of days Sunil will take to finish the job working alone, is

14. 27

Sol.: Work done by Amal, Sunil and Kamal is in HP.
So time taken by Amal, Sunil and Kamal will be in AP.
Let Amal complete the work in n days.
Then, Kamal will complete the work in 2n days and Sunil will complete the work in (n + 2n)/2 = 1.5n days.
Ratio of time taken = $n : 1.5n : 2n = 2 : 3 : 4$
Ratio of work done = $1/2 : 1/3 : 1/4 = 6 : 4 : 3$
Total units of work = $6 \times 4 + 4 \times 9 + 3 \times 16 = 108$
Hence, time taken by Sunil alone to complete the work is 108/4 = 27 days.

15. Anil invests Rs. 22000 for 6 years in a certain scheme with 4% interest per annum, compounded half-yearly. Sunil invests in the same scheme for 5 years, and then reinvests the entire amount received at the end of 5 years for one year at 10% simple interest. If the amounts received by both at the end of 6 years are same, then the initial investment made by Sunil, in rupees, is

15. 20808

Sol.: Let the initial amount invested by Sunil be P.

Then, $22000\left(1+\dfrac{2}{100}\right)^{12} = P\left(1+\dfrac{2}{100}\right)^{10} \times 1.1$

$\Rightarrow 22000\left(1+\dfrac{2}{100}\right)^{2} = P \times 1.1$

$\Rightarrow P = \dfrac{22000 \times 1.02 \times 1.02}{1.1}$

$\Rightarrow P = Rs.20,808.$

16. Arvind travels from town A to town B, and Surbhi from town B to town A, both starting at the same time along the same route. After meeting each other, Arvind takes 6 hours to reach town B while Surbhi takes 24 hours to reach town A. If Arvind travelled at a speed of 54 km/h, then the distance, in km, between town A and town B is

16. 972

Sol.: Let S be the speed of Surbhi.

Then, $\dfrac{S1}{S2} = \sqrt{\dfrac{t2}{t1}} \Rightarrow \dfrac{54}{S} = \sqrt{\dfrac{24}{6}} = 2$

(Where S1 and S2 be the speeds of Arvind and Surbhi. T1 and T2 be time taken by Arvind and Surbhi from the meeting point.)

$\Rightarrow S = 27$ km/h

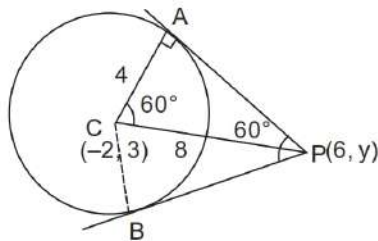Hence, distance between town A and town B = 27 × 24 + 54 × 6 = 972 km.

17. Let C be the circle $x^2 + y^2 + 4x - 6y - 3 = 0$ and L be the locus of the point of intersection of a pair of tangents to C with the angle between the two tangents equal to 60°. Then, the point at which L touches the line x = 6 is

1. (6, 8)
2. (6, 4)
3. (6, 3)
4. (6, 6)

17. 3

Sol.:

Center of circle C is (–2, 3) and radius

$= \sqrt{(-2)^2 + (3)^2 - (-3)} = 4$

CP = 8

$\Rightarrow \sqrt{(6-(-2))^2 + (y-3)^2} = 8$
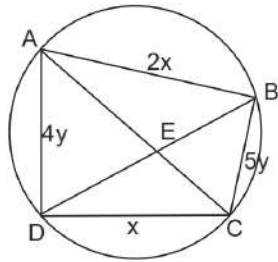
$\Rightarrow (y - 3)^2 = 0$

$\Rightarrow y = 3$.

Hence, the required point is (6, 3).

18. A quadrilateral ABCD is inscribed in a circle such that AB : CD = 2 : 1 and BC : AD = 5 : 4. If AC and BD intersect at the point E, then AE : CE equals

1. 8 : 5
2. 5 : 8
3. 1 : 2
4. 2 : 1

18. 1

Sol.:

ΔAEB is similar to ΔDEC.

AE/DE = BE/CE = AB/DC = 2/1

$\Rightarrow$ AE : DE = 2 : 1   ... (i)

ΔAED is similar to ΔBEC.

AE/BE = DE/CE = AD/BC = 4/5
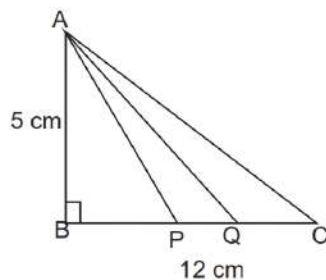
$\Rightarrow$ DE : CE = 4 : 5   ... (ii)

From (i) and (ii),

AE : CE = 8 : 5.

19. In a right-angled ΔABC, the altitude AB is 5 cm, and the base BC is 12 cm. P and Q are two points on BC such that the areas of ΔABP, ΔABQ and ΔABC are in arithmetic progression. If the area of ΔABC is 1.5 times the area of ΔABP, the length of PQ, in cm, is

19. 2

Sol.:

Since the area of ΔABC is 1.5 times the area of ΔABP.

So BC = 1.5BP

ΔABP, ΔABQ and ΔABC are in arithmetic progression.

So BP, BQ, BC is in AP.

BC = 1.5BP

$\Rightarrow$ 12 = 1.5BP

$\Rightarrow$ BP = 8 cm

So BQ = (BP + BC)/2 = (BP + 1.5BP)/2 = 1.25BP = 1.25 × 8 = 10 cm

Hence, PQ = BQ − BP = 10 − 8 = 2 cm.

20. The number of all natural numbers up to 1000 with non-repeating digits is

    1. 738   2. 648

    3. 504   4. 585

20. 1

Sol.: Number of non-repeating one digit numbers = $1 \times 9 = 9$

Number of non-repeating two digit numbers = $9 \times 9 = 81$

Number of non-repeating three digit numbers = $9 \times 9 \times 8 = 648$

Hence, total numbers = $9 + 81 + 648 = 738$.

21. For some positive and distinct real numbers x, y and z, if $\dfrac{1}{\sqrt{y}+\sqrt{z}}$ is the arithmetic mean of $\dfrac{1}{\sqrt{x}+\sqrt{z}}$ and

$\dfrac{1}{\sqrt{x}+\sqrt{y}}$, then the relationship which will always hold true, is

    1. $\sqrt{x}$, $\sqrt{z}$ and $\sqrt{y}$ are in arithmetic progression

    2. x, y and z are in arithmetic progression

    3. $\sqrt{x}$, $\sqrt{y}$ and $\sqrt{z}$ are in arithmetic progression

    4. y, x and z are in arithmetic progression

21. 4

Sol.: $\dfrac{1}{\sqrt{x}+\sqrt{z}} + \dfrac{1}{\sqrt{x}+\sqrt{y}} = \dfrac{2}{\sqrt{y}+\sqrt{z}}$

$\Rightarrow \dfrac{\sqrt{x}-\sqrt{z}}{x-z} + \dfrac{\sqrt{x}-\sqrt{y}}{x-y} = \dfrac{2(\sqrt{y}-\sqrt{z})}{y-z}$

If x, y, z is in AP. Then, $x - z = 2d$, $x - y = d$, $y - z = d$ which is not possible.

If y, x, z is in AP. Then, $x - z = d$, $x - y = -d$, $y - z = 2d$

So $\dfrac{\sqrt{x}-\sqrt{z}}{d} + \dfrac{\sqrt{x}-\sqrt{y}}{-d} = \dfrac{2(\sqrt{y}-\sqrt{z})}{2d}$

$\Rightarrow (\sqrt{x}-\sqrt{z}) - (\sqrt{x}-\sqrt{y}) = (\sqrt{y}-\sqrt{z})$

Hence, y, x, z is in AP.

22. A lab experiment measures the number of organisms at 8 am every day. Starting with 2 organisms on the first day, the number of organisms on any day is equal to 3 more than twice the number on the previous day. If the number of organisms on the nth day exceeds one million, then the lowest possible value of n is

22. 19

Sol.: First term of the series is 2.

Second term = $2 \times 2 + 3 = 7$

Third term = $7 \times 2 + 3 = 17$

Fourth term = $17 \times 2 + 3 = 37$

Fifth term = $37 \times 2 + 3 = 77$

....

So nth term of the series

$= 2^n + 3 \times (2^{n-1} - 1) = 2^n + 3 \times 2^{n-1} - 3$

$= 2^{n-1}(2+3) - 3 = 5 \times 2^{n-1} - 3$

So $5 \times 2^{n-1} - 3 > 1000000$

Hence, least value of n is 19.