



# VISION IAS

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## TEST BOOKLET

C

CSAT APTITUDE TEST– (4284) – 2024

Time Allowed: Two Hours

Maximum Marks: 200

## INSTRUCTIONS

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS BOOKLET **DOES NOT** HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.
2. ENCODE CLEARLY THE TEST BOOKLET SERIES **A, B, C** OR **D** AS THE CASE MAY BE IN THE APPROPRIATE PLACE IN THE ANSWER SHEET.
3. You have to enter your Roll Number on the Test Booklet in the Box provided alongside. **DO NOT** write *anything else* on the Test Booklet.
4. This Test Booklet contains **80** items (Questions). Each item is printed in **English**. Each item comprises four responses (answers). You will select the response which you want to mark on the Answer Sheet. In case you feel that there is more than one correct response, mark the response which you consider most appropriate. In any case, choose **ONLY ONE** response for each item.
5. You have to mark all your responses **ONLY** on the separate Answer Sheet provided. See direction in the answers sheet.
6. All items carry equal marks. Attempt all items. Your total marks will depend only on the number of **correct responses** marked by you in the answer sheet. For **every incorrect** response **one-third** of the allotted **Marks** will be deducted.
7. Before you proceed to mark in the Answer sheet the response to various items in the Test booklet, you have to fill in some particulars in the answer sheets as per the instruction sent to you with your Admission Certificate.
8. After you have completed filling in all responses on the answer sheet and the examination has concluded, you should hand over to Invigilator only the answer sheet. You are permitted to take away with you the Test Booklet.
9. Sheets for rough work are appended in the Test Booklet at the end.

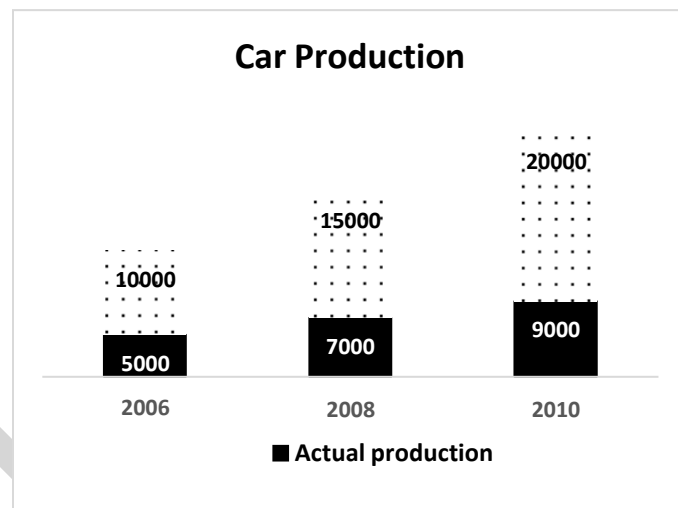
**DO NOT OPEN THIS BOOKLET UNTIL YOU ARE ASKED TO DO SO**

1. If the average of 5k and 3l is equal to 50% of 6l, what is the value of k/l ?  
 (a)  $\frac{3}{5}$   
 (b)  $\frac{5}{9}$   
 (c)  $\frac{9}{5}$   
 (d)  $\frac{5}{3}$
  
2. For the fall semester, five tests were taken - three quizzes, a mid-term exam, and a final exam. Each quiz had the same maximum marks. To determine the final grade and score, the mid-term exam was worth four times as much as a quiz, and the final exam was worth six times as much as a quiz. If Manish scored 94, 78 and 92 in the quizzes, 92 in the mid-term exam and 94 in the final exam, then what was his average score in the semester?  
 (a) 95  
 (b) 92  
 (c) 82  
 (d) 85
  
3. A, B, C, D, E, F, G and H are integers such that  $A < B < C < D < E < F < G < H$ . If B is the average of A, C and F, and D is the average of C, E, G and H, then what is the average of B and D?  
 (a)  $(4A + 4C + 4F + 2C + 2E + 3G + 3H)/24$   
 (b)  $(2A + 2C + 2F + 3C + 3E + 3G + 3H)/24$   
 (c)  $(4A + 4C + 4F + 3C + 3E + 3G + 3H)/24$   
 (d)  $(4A + 4C + 4F + 3C + 3E + 3G + 3H)/12$

**Directions for the following 2 (two) items:**

Study the following graph carefully and answer the questions that follow.

Graph given below shows the number of actual and expected production of cars in the given years.



4. The cost of production of one car was Rs.10,000 in 2006, and Rs.15,000 in 2010. What was the percent increase in gross production cost from 2006 to 2010?  
 (a) 190%  
 (b) 250%  
 (c) 280%  
 (d) 170%
  
5. The capacity of the company is to produce 15 thousand cars per year. If the trend of linear growth continued for the production, in which year would the actual production equal the capacity?  
 (a) 2020  
 (b) 2018  
 (c) 2016  
 (d) 2012

**Directions for the following 2 (two) items:**

Read the following **two** passages and answer the items that follow each passage. Your answers to these items should be based on the passages only.

**Passage – 1**

Climate change could mean big trouble for farmers in India, as it threatens to upset the monsoon season. Changing weather patterns might even lead to famine, due to dangerous impacts on agriculture. The wet summer monsoon season is vital for India and other South-Asian countries because it brings most of the annual rainfall that is critical for agriculture. Large areas of western and central India receive more than 90 per cent of their total annual rainfall during the summer monsoon season. Indian farmers rely on the timing and predictability of the monsoon season to grow crops. For thousands of years, farming has been carefully timed to coincide planting with the onset of monsoon rains to maximize crop production. Because India's economy is heavily based on agriculture, the importance of accurately predicting the timing and severity of monsoons is extremely important.

6. Based on the above passage, the following *assumptions* have been made:

1. Considering the changing monsoon patterns, western and central India should explore alternate ways of irrigation.
2. Any conflict between the onset of monsoon and plantation could significantly reduce crop yield.

Which of the above assumptions is/are valid?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Passage – 2**

To young people living in democracies, authoritarianism may seem like a long-forgotten part of their country's history. For as long as *they* can remember, their fellow citizens have had the right to voice their opinion and to organize freely, political parties have competed in meaningful elections, and the legislature and courts have checked their governments' actions. But these experiences are far from universal. Many countries are not democracies, and most countries that are democratic are younger than a lifetime. This means that for most people, life under authoritarianism is either their current experience, or they remember a time when it was.

7. Which one of the following statements **best reflects the crux** of the passage?

- (a) For young people, democracy is a better political model than dictatorship.
- (b) At the core, democracy is only a mask to practice an authoritarian model of governance.
- (c) With mechanisms like the freedom to voice opinion and executive accountability, no country should be under an authoritarian regime in today's world.
- (d) Most people in the world, by experience, know the difference between democracy and dictatorship.

8. Three wild animals X, Y and Z are roaming in a forest in such a way that when X takes 5 steps, Y takes 6 steps and Z takes 7 steps. But the 4 steps of X are equal to the 5 steps of Y and 6 steps of Z. What is the respective ratio of their speeds?

- (a) 173:170:168
- (b) 75:72:70
- (c) 11:20:30
- (d) 168:175:180

9. Consider the following information and the Statements and Question that follow:  
Three numbers are given in increasing order. The arithmetic mean of the first two is 7 less than the arithmetic mean of all the three. The sum of the first two numbers is equal to the arithmetic mean of the last two.  
Statement-1: The second number is given.  
Statement-2: The arithmetic mean of the first and third numbers is given.  
Question: What is the first number?  
Which one of the following is correct in respect of the above Question and the Statements?  
(a) Statement 1 alone is sufficient to answer the question.  
(b) Statement 2 alone is sufficient to answer the question.  
(c) Either Statement 1 alone or Statement 2 alone is sufficient to answer the question.  
(d) Both the Statements are needed together to answer the question.
10. A man can row 22 km/hr in still water. It takes him thrice as long to row up than to row down. Find the rate of flow of the stream.  
(a) 8 km/hr  
(b) 9 km/hr  
(c) 10 km/hr  
(d) 11 km/hr
11. P and Q started simultaneously towards each other from X and Y respectively. The distance between X and Y is 680 km, and the ratio of the speeds of P and Q is 7:10. How much more distance would Q cover as compared to P by the time they meet?  
(a) 110 km  
(b) 105 km  
(c) 130 km  
(d) 120 km
12. The ratio of the ages of a man and his wife is 6:5. After 6 years, this ratio will be 7:6. If at the time of the marriage this ratio was 4:3, then how many years ago did they marry?  
(a) 13 years  
(b) 12 years  
(c) 10 years  
(d) 8 years
13. Two alloys contain gold and copper in the ratios of 5:3 and 3:4. If the two alloys are mixed in the proportion 8:11 respectively by weight, then the ratio of gold and copper in the newly formed alloy is:  
(a) 65:68  
(b) 68:65  
(c) 19:27  
(d) 27:19
14. In a job interview process, the ratio of selected to rejected candidates was 3:11. If 90 less candidates had applied and 34 less were selected, then the ratio of selected to rejected candidates would have been 1:4. How many candidates applied for the job interview originally?  
(a) 960  
(b) 880  
(c) 1120  
(d) 660
15. The average of the marks obtained by 296 candidates was 77. If the average of passed candidates was 89 and that of failed candidates was 57, then find the number of those candidates that passed the examination.  
(a) 185  
(b) 165  
(c) 190  
(d) 200

16. The average of the ages of P and Q is 31 years. If R were to replace P, the average would become 38 years and if R were to replace Q, the average would become 42 years. The age of R is how much more than that of P?

(a) 15 years  
(b) 16 years  
(c) 14 years  
(d) 18 years

17. The average of any 9 consecutive odd natural numbers is 'm'. What would be the new average if 4 more such numbers, just next to the previous 9 numbers, are also considered?

(a)  $3m - 10$   
(b)  $2m - 6$   
(c)  $m + 4$   
(d)  $m + 2$

18. A batsman scored 2014 runs in a certain number of innings. In the next ten innings, he was out of form and hence could only manage to make 132 runs. As a result, his average got reduced by 32 runs. How many innings did he play in total?

(a) 19  
(b) 24  
(c) 29  
(d) 36

**Directions for the following 3 (three) items:**

Read the following **two** passages and answer the items that follow each passage. Your answers to these items should be based on the passages only.

### Passage – 1

Gender equality remains unfinished business in every country of the world. Women and girls have less access to education and healthcare, too often lack economic autonomy and are under-represented in decision-making at all levels. The progress that has been made towards gender equality over the past quarter of a century, though slow and incremental, does however show that change is possible.

19. Which one of the following statements **best reflects the crux** of the passage?

(a) The situation of women around the world could improve further.  
(b) The patriarchal mindset around the world needs to change for improving gender equality.  
(c) A country's progress is meaningless without the contribution of the female gender.  
(d) Every country needs to bring adequate laws and policies to improve the situation of women and help them become financially independent.

**Passage – 2**

A talk by gender-critical feminist academic Dr Kathleen Stock at the Oxford Union on Tuesday met with vociferous opposition, as trans-rights activists disrupted the session and protested against her invitation. Stock, author of books such as *Material Girls: Why Reality Matters for Feminism* (2021), has long been at the receiving end of criticism for her view that biological sex is more socially significant than gender identity, even though it does not exclude sympathy for the trans-rights movement. At the talk, Stock, 51, who quit her position at the University of Sussex in 2021 owing to sustained protests and accusations of transphobia against her, reiterated her views that while she wanted trans people to be protected from “violence and discrimination”, she did not think it was “fair on females” to share spaces with trans women where violence is a possibility. “We are supposed to care about women. It is a risk of a man saying he is a woman and going into a space and taking advantage of that,” she said. TERF or “trans-exclusionary radical feminist” refers to feminists whose advocacy for women’s rights do not include the rights of transgender people, especially trans women. Even though the term gained currency in the early 2000s, it was born during the early 1970s feminist movement in the US, where a faction of feminists focused on the championing of the “female essence” or what historian Alice Echols called a “female standard of sexuality”.

20. Which of the following statements best reflects the **crucial message** conveyed by the passage?
- The social significance of biological sex exceeds that of gender identification.
  - When transwomen are present in public locations, females are at risk of violence.
  - TERF activists agitate for the rights of transgender people.
  - A category of feminist scholars exclude trans people when it comes to women rights.

21. Which of the statements given below **can be inferred** from the above passage?
- Under pressure for her views, Stock resigned from the university.
  - The term TERF or “trans-exclusionary radical feminist” originated in the 21st century.

Select the correct answer using the code given below.

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

22. Consider the following information and the Statements and Question that follow:

Arithmetic mean of five different numbers is 65.

Statement-1: None of the five numbers is greater than 100.

Statement-2: Three of these five numbers are 36, 44 and 56.

Question: How many of these five numbers are greater than 65?

Which one of the following is correct in respect of the above Question and Statements?

- Statement 1 alone is sufficient to answer the question.
- Statement 2 alone is sufficient to answer the question.
- Either Statement 1 alone or Statement 2 alone is sufficient to answer the question.
- Both the Statements are needed together to answer the question.



23. Two statements S1 and S2 are given below followed by a question.
- S1: Train A usually goes 720 km in 10 hours.
- S2: When it's raining, it typically takes train A thrice the usual time.
- Question: Train A slows down when it rains. How long does it take train A to reach a town which is 576 km away, knowing that it rained the entire time?
- Which one of the following is correct in respect of the above Statements and Question?
- (a) S1 alone is sufficient to answer the question.
- (b) S2 alone is sufficient to answer the question.
- (c) Either S1 alone or S2 alone is sufficient to answer the question.
- (d) Both the statements are needed together to answer the question.
24. The average score of students in sections A, B and C of class X is 92, 84 and 70 respectively. The average score of students in sections A and B together is 90. The average score of students in sections B and C together is 78. What is the approximate average score for all the students of class X?
- (a) 92.6
- (b) 86.8
- (c) 80.6
- (d) 84.8
25. Distance travelled by a boat along the stream is two times of the distance travelled by it against the stream. Whereas, the time taken to cover the given distance along the stream is 40% less than the time taken to cover the given distance against the stream. If a boat covers a distance of 35 km in 1 hour 45 minutes along the stream, then find the rate of stream current.
- (a) 7 km/hr
- (b) 14 km/hr
- (c) 13 km/hr
- (d) 11 km/hr
26. A student was given two different kinds of mixtures. In the first mixture, the ratio of alcohol and water is 7:5, and in the second mixture it is 3:4. Using these two mixtures, he makes a third mixture of 169 litres, in which the ratio of alcohol and water is 7:6. What quantity of first mixture is required to make 169 litres of the resultant third kind of mixture?
- (a) 120 litres
- (b) 90 litres
- (c) 69 litres
- (d) 136 litres
27. The average of five numbers is 12. If one of the numbers (say x) is multiplied by 2, and another number (say y) is multiplied by 3, the new average becomes 18. What is the average of these two numbers x and y?
- (a) 15
- (b) 12
- (c) 18
- (d) Can't be determined

28. In a 100 m race, Usha gives Dutee a start of 5.5 m and still beats her by 2 s (seconds). If Usha runs at 4 m/s, what is the speed of Dutee?
- (a) 2.5 m/s  
(b) 3 m/s  
(c) 3.5 m/s  
(d) 4 m/s

**Directions for the following 2 (two) items:**

*Read the following passage and answer the items that follow. Your answers to these items should be based on the passage only.*

**Passage**

Oil giants Shell, ExxonMobil and Chevron have lobbyists registered at the ongoing Bonn Climate Change Conference, organisations advocating against corporate lobbying have found. Their presence could unduly influence the outcome of the United Nations Framework Convention on Climate Change (UNFCCC) meeting of the Subsidiary Bodies (SB58) aimed at discussing climate finance, adaptation, operationalising the loss and damage fund and the global stocktake. The data was collated by Corporate Europe Observatory, a non-profit research and advocacy group working to expose corporate lobbying, and Corporate Accountability Research, a non-profit group that analyses business ethics. After the Paris Agreement, the international treaty on climate change adopted in 2015, lobbyists from oil companies have always been in attendance at the UN climate talks. The top five oil and gas majors in the European Union (EU) and the United States, namely Shell, BP, ExxonMobil, Chevron and Total Energies, had 403 lobbyists registered from the 21st Conference of the Parties of the UNFCCC (COP21) to COP27. Of the 403 registered delegates, Shell alone had 177 delegates registered since the Paris Agreement (2016-2023). The aforementioned organisations believe that lobbyists are there at Bonn to push the agenda of fossil fuel expansion forward to continue to rake in profits.

29. Which of the following statements best reflects the **most logical and rational message** conveyed by the author?
- (a) Global policymaking can be influenced by large corporations.  
(b) Lobbyists are more influential than policy makers.  
(c) Corporate lobbying causes the greatest harm to developing nations.  
(d) Top five oil firms are responsible for the highest carbon emissions.
30. With reference to the above passage, which of the statements given below are correct?
1. The danger from global warming is the most acute for the least developed countries.
  2. The only goal of lobbyists is to make profit at the cost of the poor.
- Select the correct answer using the codes given below.
- (a) 1 only  
(b) 2 only  
(c) Both 1 and 2  
(d) Neither 1 nor 2
31. The number of female employees in an organization P is 20% more than the number of male employees in the same company. The number of female employees in Q is 62.5% of the number of male employees in the same company. If the total number of employees in P is 15000 more than the total number of employees in Q, then what is the ratio of the total number of employees in P to the total number of employees in Q?
- (a) 5:3  
(b) 7:4  
(c) 3:5  
(d) Can't be determined



32. Raman is riding upstream on a boat, from point P to Q, at a constant speed. The distance from P to Q is 80 km. Two minutes after Raman leaves from point P, a speedboat starts from point P to go to point Q. It crosses Raman's boat after 5 minutes. The speed of the speedboat in still water is 40 km/hour. Raman takes four hours to reach point Q from point P. If the speed of the speedboat is constant from P to Q, then what is Raman's speed in still water?

(a) 32 km/hr  
(b) 28 km/hr  
(c) 12 km/hr  
(d) 22 km/hr

33. Two tanks of 120 litres and 135 litres are filled with mixture of milk and water; the proportions in the two tanks being 7:5 and 4:5 respectively. If the contents of the two tanks are mixed, and 15 litres of water is added to it, then what will be the proportion of milk and water in the resulting mixture?

(a) 17:16  
(b) 13:15  
(c) 18:13  
(d) 13:14

34. The stream of the Bay of Bengal is running at a speed of 4 km/h. A cargo ship goes 6 km upstream and back again to the starting point in 2 hours. Find the speed of the cargo ship in still water.

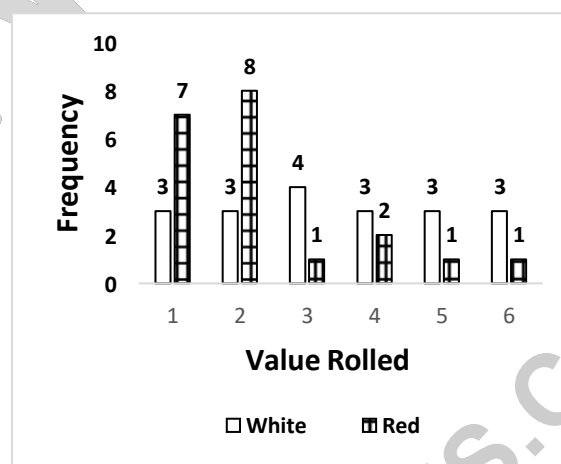
(a) 9 km/h  
(b) 1 km/h  
(c) 7 km/h  
(d) 8 km/h

35. Amar walks around a circular field at the rate of two rounds per hour while Deepak walks around it at the rate of five rounds per hour. They start in the same direction from the same point at 6:00 PM. They shall first cross each other at:

(a) 6:30 PM  
(b) 6:12 PM  
(c) 6:20 PM  
(d) 6:09 PM

36. Study the following graph carefully and answer the question that follows.

Graph given below shows the results seen on rolling 2 dice - one white and one red.



What is the average value rolled by the white die? (Note: Die is the singular of dice.)

(a) 2.50  
(b) 3.85  
(c) 3.47  
(d) 4.50

37. A man covers 60 km distance via route 1 on his scooter at a certain speed. When he covers the same distance via route 2, his speed increases by 10 km/hr, and he takes 3 hours less time.

Consider the following Statements.

Statement 1: When he covers the same distance via route 3, his speed decreases by 5 km/hr as compared to route 1, and he takes double the time as compared to the time taken to cover the same distance via route 2.

Statement 2: Ratio of the speeds via route 1 and route 2 is 1:3.

Which of the above statements is/are correct?

- (a) 1 only
  - (b) 2 only
  - (c) Both 1 and 2
  - (d) Neither 1 nor 2
38. An express train can travel 40% faster than a local train. Both start from point A at the same time and reach point B, 84 kms away from A, at the same time. On the way, however, the express train lost about 30 minutes due to some technical glitch. The speed of the express train is:
- (a) 48 km/hr
  - (b) 67.2 km/hr
  - (c) 77.2 km/hr
  - (d) 57.2 km/hr

**Directions for the following 3 (three) items:**

Read the following **two** passages and answer the items that follow each passage. Your answers to these items should be based on the passages only.

### Passage – 1

On May 26, 2023, three countries — Cameroon, Chad and Niger — kicked off Africa’s largest polio vaccination campaign since 2020, according to World Health Organization (WHO). Through this exercise, the three West and Central African countries intend to immunise 21 million children under the age of five. The vaccination drive started in response to 19 detections of type-2 Polioviruses; two cases in Niger, 10 in Chad, four in the Central African Republic and three in Cameroon. The multi-country initiative is supported by WHO through the Global Polio Eradication Initiative (GPEI). It comprises synchronised vaccinations and joint plans in border communities to stop polio transmission. “This is a crucial undertaking to close vaccination gaps in the wake of the COVID-19 pandemic and will provide millions of children with vital protection from the risk of irreversible polio paralysis,”. All polio cases in West and Central Africa are due to circulating vaccine-derived poliovirus — the final strain of polio remaining on the African continent; these outbreaks are rare. Lake Chad basin, where the campaign is underway, is among the areas with the highest percentage of unvaccinated or under-vaccinated children in the world, WHO noted. Polio is a highly infectious viral disease that primarily affects children under five years and causes permanent paralysis or death. There is no cure, but safe and effective vaccines can protect children. Eradicating polio requires immunising every child until transmission stops.

39. Which of the following statements best reflects the **crucial message** conveyed by the author of the passage?

- (a) Polio must be eradicated by immunising all children up until transmission ceases.
- (b) Polio is currently in its last stage, before being completely eradicated.
- (c) Eradication of polio is a top priority of governments across the world.
- (d) A pandemic can cause a temporary break in vaccination programs.

40. Which of the following statements is/are correct?

- 1. Largest ever polio eradication campaign started in Africa.
- 2. Polio affects only kids under 5 years of age.
- 3. Polio is an incurable disease.

Select the correct answer using the codes given below.

- (a) 1 and 2 only
- (b) 3 only
- (c) 2 and 3 only
- (d) 1 and 3 only

### Passage – 2

The UNEP Emissions Gap Report 2022 posits clearly that as growing climate change impacts are experienced across the globe, the message that greenhouse gas emissions must fall is unambiguous. The link between global net zero carbon emissions and addressing climate change is evident and it is also certain that the link itself must be even-handed, objective and ambitious. To achieve global net zero goals and garner the public support required for this, it is imperative in the long-term to view emissions within the larger context of global consumption and production patterns. Consumption and production patterns vary greatly based on the cultural, social, and economic factors. But both consumption and production ethics also vary due to beliefs, values and traditions. Some of these differences are marked by a complex interplay of factors. In the formerly established trade flows and global economic chains, it is charged that dominant economic powers exploit smaller, less developed economies — often by extracting raw materials at low prices and exporting finished products back at higher prices. This may lead to the undermining of local economies and often leads to social and environmental degradation. To avoid this, local producers need to have access to fair markets and fair prices so that they can invest in alternative, environmentally friendly production methods. Across developed markets, the average individual consumer is often more aware of the impacts of their choice on the environment.

41. Which of the following statements can be ***inferred*** from the above passage?

1. Examining worldwide consumption and production is necessary to attain net zero carbon emission goals.
2. Production and consumption are influenced by culture.
3. Access to fair markets can diminish the economic exploitation of poorer countries by rich countries.

Select the correct answer using the codes given below.

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) All 1, 2 and 3

42. Two people P and Q start running on a circular track of length 400 m in opposite directions with initial speeds of 4 m/sec and 16 m/sec respectively. Whenever they meet, P's speed gets doubled and Q's speed gets halved. After what time from the start will they meet for the third time?

- (a) 48 sec
- (b) 60 sec
- (c) 65 sec
- (d) 70 sec

43. The average of 17 numbers is 19. If each number is multiplied by 5, then what will be the new average?

- (a) 80
- (b) 95
- (c) 24
- (d) 70

44. The average weight of a group of 11 players is 160 pounds. If the heaviest player is removed from the group, the average weight of the remaining 10 players becomes 158 pounds. What is the weight of the heaviest player?

- (a) 190 pounds
- (b) 200 pounds
- (c) 180 pounds
- (d) 210 pounds

45. Consider the following information and the Statements and Question that follow:

The average of a set of 7 positive numbers is 40.

Statement 1: The sum of the smallest and largest numbers in the set is 150.

Statement 2: The range of the set is 80.

Question: Is the median of the set greater than 60?

Which one of the following is correct in respect of the above Question and Statements?

- (a) Statement-1 alone is sufficient to answer the Question.
- (b) Statement-2 alone is sufficient to answer the Question.
- (c) Both Statement-1 and Statement-2 together are sufficient to answer the Question.
- (d) Both Statement-1 and Statement-2 together are not sufficient to answer the Question.

46. In a race of 3.6 km distance, A wins by 400 m over B. B can give a head start of 900 m to C in such a race. How much head start can A provide to C so that they complete the race together?

- (a) 600 m
- (b) 800 m
- (c) 1000 m
- (d) 1200 m

47. A boat can move at a speed of 7 km/hr in still water. The speed of the stream of river is 1 km/hr. A boat takes 84 minutes to go from point P to point Q and return to the same point. What is the total distance covered by the boat?
- (a) 10.8 km  
(b) 9.6 km  
(c) 12.8 km  
(d) 18.8 km
48. Aakash drove his car at a speed 40 km/h. After 30 minutes, Anil started chasing him at a speed of 60 km/h (through the same route). Find how much distance Anil will have to cover to chase down Aakash.
- (a) 45 km  
(b) 50 km  
(c) 40 km  
(d) 60 km
49. The ratio of the number of boys to girls in a swimming class is 5:8, and the ratio of the number of boys to girls in a dance class is 2:3. The ratio of the total number of students in swimming class to dance class is 13 : 8, and the difference between the number of students in swimming class and dance class is 25. What is the ratio of the number of girls in swimming class to the number of girls in dance class?
- (a) 5 : 3  
(b) 2 : 1  
(c) 3 : 5  
(d) 1 : 3
50. Ratio of the monthly income of A to that of B is 4:5, and the ratio of the monthly income of B to that of C is 9:7. The difference between B's monthly income and his savings is Rs.18000, and savings of B are 60% more than his expenditure. What is the approximate average of the incomes of A, B and C?
- (a) Rs. 42,313  
(b) Rs. 38,213  
(c) Rs. 40,213  
(d) Rs. 42,613

**Directions for the following 4 (four) items:**

Read the following **three** passages and answer the items that follow each passage. Your answers to these items should be based on the passages only.

**Passage – 1**

Violence against healthcare workers in Mali more than doubled in 2022 as compared to 2021, a new report has pointed out. The document identified 46 incidents of violence against healthcare workers or obstruction of healthcare in the country in 2022 — an increase from 20 in 2021. Ignoring Red Lines: Violence Against Health Care in Conflict 2022 report was published by Safeguarding Health in Conflict Coalition (SHCC), a group of international non-profits working towards protecting health workers, services and infrastructure. It documented 1,989 attacks and threats against healthcare facilities and personnel across 32 countries and territories which are reeling under armed conflict and political instability throughout 2022. Among 32 countries and territories, 15 countries — Burkina Faso, Cameroon, Central African Republic, Democratic Republic of Congo, Ethiopia, Kenya, Libya, Mali, Morocco, Mozambique, Niger, Nigeria, Somalia, South Sudan, and Sudan — were from Africa. Over half of the total attacks were reported in just two countries, Ukraine and Myanmar, the report stated. “Over the last year, we identified a 45 percent increase in reported incidents of violence against or obstruction of health care in conflict zones as compared to 2021,” said Christina Wille, director of Insecurity Insight. Wille led the data collection and analysis for the report. Reported violence against or obstruction of health care decreased in the Central African Republic, Ethiopia and Syria in 2022 compared to 2021. However, cases in some countries in West and Central Africa, including Burkina Faso, Cameroon and Mali, have been increasing, the report noted.

51. Which of the following statements *can be inferred* from the above passage?

1. Attacks on healthcare professionals have increased in all of Africa.
2. Healthcare workers have been attacked in at least three continents.

Select the correct answer using the codes given below.

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

52. Consider the following statements.

1. The largest number of attacks against healthcare personnel occurred in Myanmar.
2. Attacks against healthcare personnel increased by less than 50% in 2022 as compared to 2021.

Which of the statements given above is/are true?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

### Passage – 2

The persistence of gender inequality is most starkly brought home in the phenomenon of "missing women." The term was coined by Amartya Sen in a now-classic article in the New York Review of Books to capture the fact that the proportion of women is lower than what would be expected if girls and women throughout the developing world were born and died at the same rate, relative to boys and men, as they do in sub-Saharan Africa. Today, it is estimated that 6 million women are missing every year. Of these, 23 per cent are never born, 10 per cent are missing in early childhood, 21 per cent are in the reproductive years, and 38 per cent are above the age of 60. Stark as the excess mortality is, it still does not capture the fact that throughout their lives, even before birth, women in developing countries are treated differently than their brothers, lagging behind men in many domains. For each missing woman, many more women fail to get an education, a job, or a political responsibility that they would have obtained if they had been men.

53. Which one of the following statements *best reflects the crux* of the passage?

- (a) Developing nations should improve their criminal justice systems to reduce the high rate of missing women.
- (b) To improve the status of women, it is critical to transform society into a matriarchal one.
- (c) Basic human rights are violated when men are valued more than women in developing nations.
- (d) Women's status in developing nations cannot improve without making necessary changes in laws, politics and education.



**Passage – 3**

Encryption and cryptographic techniques for preserving the security of online communication have become increasingly contested in India. Rapid digitalization in the past decade has led to the proliferation of domestic and foreign online communication services that use encryption and pose challenges to national security bodies and law enforcement agencies (LEAs). To help overcome these challenges, the Indian government issued controversial new rules in February 2021 that require messaging communication providers to supply information regarding the originators of messages. Many providers argue that this requirement significantly weakens the end-to-end (E2E) encryption they deploy.

**54.** Based on the above passage, the following *assumptions* have been made:

1. Government of India, too, should enhance its technological capabilities for surveillance to ensure the security of online communications.
2. It is important to end the controversy regarding new rules for boosting the business environment.

Which of the above assumptions is/are valid?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**55.** The fuel cost for operating a bus service is Rs. (Speed)<sup>2</sup> per hour. Other charges put together are Rs. 100 per hour. Which of the following statements must be true regarding a journey of 500 kilometres?

- (a) The cost of entire journey is Rs. 3000.
- (b) At the speed of 40 km per hour, the cost of journey shall be minimum.
- (c) The time of journey shall be at least 18 hours.
- (d) The cost of journey may be Rs. 10000.

**56.** A shopkeeper mixes two varieties of tea - one costing Rs. 260 per kg and the other costing Rs. 400 per kg, to produce a blended variety of tea worth Rs. 320/kg. What should have been the quantity of second variety of tea used by him, if he used 132 kg of the first variety?

- (a) 188 kg
- (b) 64 kg
- (c) 78 kg
- (d) 99 kg

**57.** If Sachin walks at 2 km/h, he will miss the bus by 25 minutes. If he walks at 4 km/h, he will reach 10 minutes before the departure of the bus. How far Sachin walks to reach the bus stand?

- (a) 1.5 km
- (b) 2 km
- (c) 0.5 km
- (d) None of these

58. A fast moving superfast train crosses another express train in 30 seconds. The speed of faster train is 120 km/hr, and the speed of slower train is 84 km/hr. Length of the faster train is 180 m. Find the length of the slower train, if they are moving in opposite directions.
- (a) 100 m  
(b) 120 m  
(c) 90 m  
(d) 110 m
59. A bullet train of length 210 m crosses a platform of length 190 m in 8 seconds. What is the speed of the train?
- (a) 180 km/hr  
(b) 160 km/hr  
(c) 150 km/hr  
(d) 200 km/hr
60. In a class, the number of boys and girls are in the ratio of 4:3. If 10 more boys and 15 more girls join the class, the ratio of the number of boys and girls becomes 10:9. How many more boys are there in the class as compared to the number of girls?
- (a) 10  
(b) 30  
(c) 40  
(d) Cannot be determined
61. Mr. Sharma gives 40% of his salary to his father, 40% of the remaining salary he invests in insurance scheme and share market in the ratio 4:11, and the remaining he keeps in his bank account. The difference between the amounts he keeps in the bank account and that he invests in the share market is Rs. 46000. How much is Mr. Sharma's salary?
- (a) Rs. 3,60,000  
(b) Rs. 2,00,000  
(c) Rs. 2,50,000  
(d) Rs. 3,00,000

62. Two alloys A and B contain silver and copper in the ratio 5:3 and 9:7 respectively. In what ratio should the two alloys be mixed to get a new alloy having silver and copper in the ratio 3:2?
- (a) 1:2  
(b) 2:3  
(c) 3:2  
(d) 2:1

**Directions for the following 3 (three) items:**

Read the following **two** passages and answer the items that follow each passage. Your answers to these items should be based on the passages only.

**Passage – 1**

The role of culture in moral development is an important topic that raises fundamental questions about what is universal and what is culturally specific regarding morality and moral development. Many research traditions have examined this question, with social-cognitive and structural-developmental positions theorizing that morality has a universal requirement to it, drawing from moral philosophy. The expectation is that if morality exists, it has to do with those values that are generalizable across groups and cultures. Alternatively, relativistic cultural positions have been put forth mostly by socialization theories that focus on how cultures transmit values rather than what values are applied across groups and individuals.

63. Which one of the following statements *best reflects the crux* of the passage?

- (a) Considering the universal nature of morality, culture does not play any significant role in moral development.
- (b) Socialization is the most important tool in the development of universal moral values.
- (c) Despite the universal nature of morality, it may get impacted by socialization via the local cultures of a society.
- (d) Universal moral values are fundamentally stronger than the moral values developed through socialization.

#### Passage – 2

Agriculture has the potential to drive economic development, contribute to food security and generate income for millions of rural farmers. Recent years have seen growth in digital innovations that can address the various agricultural and food industry challenges. Startups led by the private sector are tackling issues ranging from access to markets to the provision of financial services. However, despite innovations and viable business models, challenges persist. This is due, in part, to constraints in sharing knowledge and lessons learned among countries and regions of the Global South. As a result, agricultural solutions have failed to achieve the wider impact that could modernize and transform the continent's agricultural and food industry sectors.

64. Based on the above passage, the following *assumptions* have been made:

- 1. Along with the private sector, governments should invest in promoting startups in the field of agriculture.
- 2. Sharing of knowledge and lessons should be across the globe and not only limited to the regions of the global south.

Which of the above assumptions is/are valid?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

65. Which one of the following statements *best reflects the crux* of the passage?

- (a) The only restriction in modernizing and transforming the agriculture sector is the lack of knowledge sharing and learning from countries of the global south.
- (b) Startups in the field of agriculture can solve the core persisting issues of agriculture.
- (c) Countries across the world should invest in agricultural technology for ensuring food security and economic development.
- (d) Harnessing the potential of agriculture depends on the sharing of knowledge and lessons learned from regions of the global south.

66. Two statements S1 and S2 are given below followed by a question.  
 S1: The average of X and Y is 60.  
 S2: The average of the integers between X and Y, not including either, is 60.  
 Question: What is the average of the consecutive integers from X to Y, including both?  
 Which one of the following is correct in respect of the above Statements and the Question.  
 (a) S1 alone is sufficient to answer the question.  
 (b) S2 alone is sufficient to answer the question.  
 (c) Either S1 alone or S2 alone is sufficient to answer the question.  
 (d) Both the statements together are not sufficient to answer the question.
67. Two statements S1 and S2 are given below followed by a question.  
 S1: The ratio of incomes of Mr. X in the years 2022 and 2023 is 3 : 4.  
 S2: The ratio of his expenditures in the years 2022 and 2023 is 5 : 6.  
 Question: What is the ratio of Mr. X's savings in the year 2022 to that in the year 2023?  
 Which one of the following is correct in respect of the above Statements and the Question.  
 (a) S1 alone is sufficient to answer the question.  
 (b) S2 alone is sufficient to answer the question.  
 (c) Both the statements together are sufficient to answer the question.  
 (d) Both the statements together are not sufficient to answer the question.
68. The distance between two stations X and Y is 1000 km. A train starts at 11 AM from X and moves towards Y at an average speed of 50 km/h. Another train starts from Y at 10 AM and moves towards X at an average speed of 100 km/h. At what time the two trains will meet?  
 (a) 3 PM  
 (b) 4 PM  
 (c) 5 PM  
 (d) None of these
69. The average of 20 numbers is zero. How many of these numbers may be greater than zero at max?  
 (a) 19  
 (b) 18  
 (c) 20  
 (d) 10
70. Consider the following information and the Statements and Question that follow:  
 In a hockey team, the average age of 11 players is 32 years.  
 Statement-1: The captain is 16 years older than the youngest player.  
 Statement-2: The average age of 10 players other than the captain is 31.5 years.  
 Statement-3: Leaving aside the captain and the youngest player, the average ages of the three groups of three players each are 35 years, 33 years and 30 years respectively.  
 Question: What is the age of the captain?  
 Which one of the following is correct in respect of the above Question and Statements.  
 (a) Any two of the given three statements are sufficient to answer the question.  
 (b) Either Statement 1 and 3 together or Statement 2 alone is sufficient to answer the question.  
 (c) Either Statement 1 alone or Statement 2 alone is sufficient to answer the question.  
 (d) Statement 2 and 3 together are sufficient to answer the question.

71. Consider the following information and the Statements and Question that follow:

A boat takes a total time of 12 hours to travel downstream from X to Y and upstream back from Y to X.

Statement-1: The speed of the river current is 2 km/hr.

Statement-2: The distance between X and Y is 70 km.

Question: What is the speed of the boat in still water?

Which one of the following is correct in respect of the above Question and Statements.

- (a) Statement 1 alone is sufficient to answer the question.
- (b) Statement 2 alone is sufficient to answer the question.
- (c) Either Statement 1 alone or Statement 2 alone is sufficient to answer the question.
- (d) Both the Statements are needed together to answer the question.

72. A train travelled from Delhi to Bangalore covering a distance of 2500 km. The train stops for 5 minutes after every 125 km. If for each 125 km, it maintains an average speed of 100 km/h, then the time taken by the train to reach its destination is:

- (a) 26 h 35 min
- (b) 26 h 40 min
- (c) 26 h 30 min
- (d) 25 h 30 min

**Directions for the following 4 (four) items:**

Read the following **two** passages and answer the items that follow each passage. Your answers to these items should be based on the passages only.

**Passage – 1**

As India reaches a tipping point of transitioning from a mostly rural to an urban society, the focus must be on ensuring the best opportunities for economic growth for all sections of the society. It is a matter of concern that despite huge investments, our cities still face many efficiency-and sustainability-related challenges. None of our cities features among the top 50 cities in many global rankings. The need of the hour is incisive, insightful planning – in the absence of which neither investments nor actions would be able to yield long-term solutions. Unplanned urbanization could result in serious downsides. Cities are like living organisms. For them to flourish, their economic and social infrastructure must be in a sound state. There are enormous possibilities to achieve this through the adoption of spatial planning tools. We must rethink, reimagine, and re-establish the very purpose and approach towards the planning of cities and towns in India.

73. Which of the following is/are **the most rational and logical inference/inferences** that can be made from the passage?

- 1. Presence or absence of cities in global rankings depends on their efficiency and sustainability.
- 2. Poor investments in creating sustainable cities hamper India's transition to an urban society.

Select the correct answer from the code given below:

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2



74. Which one of the following statements *best reflects the critical message* conveyed by the passage given above?

- (a) Insightful planning of well-organized and sustainable cities is the key to an inclusive urban Indian society.
- (b) Considering the increasing load on Indian cities, we need to replan each city across the country.
- (c) India should aim to get its best cities in the top 50 global rankings.
- (d) Unplanned urbanization will lead to poverty, loss of GDP, and poor use of human and economic capital.

#### Passage – 2

Food security exists when all people have physical and economic access to sufficient, safe, and nutritious food. Unfortunately, food security does not exist for a significant proportion of the world population. Around 900 million people are undernourished, meaning that they are undersupplied with calories. Many more suffer from specific nutritional deficiencies, often related to insufficient intake of micronutrients. Eradicating hunger is central to the Sustainable Development Goals. But how to achieve this goal is debated controversially. Genetically modified (GM) crops are sometimes mentioned in this connection. Some see the development and use of GM crops as key to reducing hunger while others consider this technology as a further risk to food security. Solid empirical evidence to support either of these views is thin.

75. Which of the following is/are *the most rational and logical inference/inferences* that can be made from the passage?

- 1. Unclear mechanism of SDGs for eradicating hunger is the cause of continued cases of global hunger.
- 2. Merely consuming sufficient calories will not solve the challenges related to food security.

Select the correct answer using the code given below.

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

76. Which one of the following statements *best reflects the message of the author* of the passage?

- (a) Information sharing on available food resources across nations can help address the challenge of food security.
- (b) Before ensuring mass production of food using GM crops, the debate around its safe use should be settled.
- (c) With regards to food security, genetically modified crops can guarantee the quantity of food, but they have been known to cause serious health related issues.
- (d) Rather than depending on GM crops, promoting organic farming can fulfil all the needs of food security.

77. A class consists of 10 students. The teacher expects the class to have an average score of at least 80. The average score of 9 students was calculated to be 78. What marks do the last student need to score for the overall average of the class to match the teacher's standard?

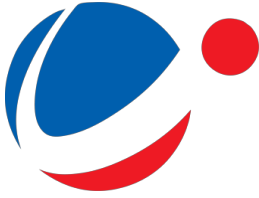
- (a) 88
- (b) 82
- (c) 98
- (d) 100



78. The average of  $(b + 1)$  and 1 is equal to the average of  $(b + 4)$ , 4 and 2. What is the value of  $b$ ?
- (a) 20  
(b) 10  
(c) 16  
(d) 14
79. 120 employees work in an office. 70 of the employees are graduates and 80 are fresh out of college employees. What is the ratio between the minimum to maximum number of graduates who are fresh out of college?
- (a) 1:2  
(b) 2:3  
(c) 3:7  
(d) 5:7
80. If  $x$  is the average of  $r$  and 11,  $y$  is the average of  $3r$  and 19, and  $z$  is the average of  $5r$  and 20, what is the average of  $x$ ,  $y$ , and  $z$  in terms of  $r$ ?
- (a)  $1.5r + 8$   
(b)  $3r$   
(c)  $1.5r$   
(d)  $4.5r + 25$

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## ANSWERS & EXPLANATION

### APTITUDE TEST–Test (4284) – 2024

1 (a)

Average of 5k and 3l is equal to 50% of 6l.

$$\text{Or } (5k + 3l)/2 = 50\% \text{ of } 6l$$

$$\text{Or } (5k + 3l)/2 = 3l$$

$$\text{Or } (5k + 3l) = 6l$$

$$\text{Or } 5k = 6l - 3l$$

$$\text{Or } 5k = 3l$$

$$\text{Or } k/l = 3/5$$

Hence, option (a) is correct.

2 (b)

The formula for a weighted average is:

Sum of the (weight x values) divided by the sum of the weights.

Mid-term exam was worth four times as much as a quiz, and the final exam was worth six times as much as a quiz.

$$\text{So, Weighted Average of marks} = (1 \times 94 + 1 \times 78 + 1 \times 92 + 4 \times 92 + 6 \times 94) / (1 + 1 + 1 + 4 + 6)$$

$$= 1196 / 13$$

$$= 92$$

Hence, option (b) is correct.

3 (c)

B is the average of A, C and F.

$$\text{So, } B = (A + C + F)/3$$

D is the average of C, E, G and H.

$$\text{So, } D = (C + E + G + H)/4$$

$$\text{So, Average of B and D} = [(A + C + F)/3 + (C + E + G + H)/4] / 2$$

$$= [(4A + 4C + 4F + 3C + 3E + 3G + 3H)/12] / 2$$

$$= (4A + 4C + 4F + 3C + 3E + 3G + 3H) / 24$$

Hence, option (c) is correct.

4 (d)

$$\text{Production costs in 2006} = \text{Rs. } 10,000 \times 5,000 = \text{Rs. } 500 \text{ lakhs}$$

$$\text{Production costs in 2010} = \text{Rs. } 15,000 \times 9,000 = \text{Rs. } 1350 \text{ lakhs}$$

$$\text{The percent increase in gross production cost from 2006 to 2010} = [(1350 - 500)/500] \times 100 = 170\%$$

Hence, option (d) is correct.

5 (c)

Each year the gap between actual production and capacity decreased by 1000.

$$\text{In 2010, the gap is } 15000 - 9000 = 6000.$$

So, in 6 years the gap would disappear, i.e. in 2016.

Hence, option (c) is correct.

6 (c)

**Assumption 1 is correct.** The line “Large areas of western and central India receive more than 90 per cent of their total annual rainfall during the summer monsoon season”, validates the assumption made in the statement that if these areas depend 90 per cent on the monsoon rainfall and climate change may upset the monsoon season, then alternate ways should be explored. Hence, this assumption is correct as per the passage.

**Assumption 2 is correct.** As per the line “For thousands of years, farming has been carefully timed to coincide planting with the onset of monsoon rains to maximize crop production”, if there is any change in the onset of monsoon or if the plantation is not as per the onset, then it could reduce the crop yield or lead to crop loss. Hence, this assumption is correct as per the passage.

7 (d)

**Option (a) is incorrect.** The given option is not correct because it compares which model is better. However, the passage does not compare which is good. Also, the option specifically talks about young people and that democracy is good for them, but the passage is not focussed on young people only. Hence, this option is not the best crux.

**Option (b) is incorrect.** Democracy being the mask for authoritarianism is not discussed in the passage. Hence, this option is beyond the scope of the passage and is not the crux of the passage.

**Option (c) is incorrect.** The given option is not correct because it talks about an ideal scenario in that no country should be under authoritarianism due to the benefits offered by democracy. However, whether a country should be a democracy or under a dictatorship is not discussed in the passage.

**Option (d) is correct.** The lines “Many countries are not democracies, and most countries that are democratic are younger than a lifetime. This means that for most people, life under authoritarianism is either their current experience, or they remember a time when it was”, support the claim given in the option. The passage, talks about how people are either living in a dictatorship or they know what it looks like due to their historical experience. Hence, this is the best crux of the passage.

8 (b)

Frequency of steps of X, Y and Z,  $X_1: Y_1: Z_1 = 5:6:7$

Let  $X_1 = 5c$ ,  $Y_1 = 6c$  and  $Z_1 = 7c$  ( $c$  is a constant)

In terms of size of step,  $4X_2 = 5Y_2 = 6Z_2 = k$  ( $k$  is a constant)

So,  $X_2 = k/4$ ;  $Y_2 = k/5$  and  $Z_2 = k/6$ .

Since, Speed = Distance  $\times$  Frequency = Step size  $\times$  Frequency

So, the speeds of X, Y and Z are:

$X_3 = (5/4)ck$ ;  $Y_3 = (6/5)ck$  and  $Z_3 = (7/6)ck$ .

So the ratio of speeds of X, Y and Z =  $(5/4) : (6/5) : (7/6)$

=  $(5/4) \times 60 : (6/5) \times 60 : (7/6) \times 60$

(LCM of 4, 5 and 6 = 60)

= 75:72:70

Hence, option (b) is correct.

9 (c)

Let the 3 numbers in increasing order be X, Y and Z.

The arithmetic mean of the first two is 7 less than the arithmetic mean of all the three.

$[(X + Y + Z)/3] - [(X + Y)/2] = 7$

Or  $2X + 2Y + 2Z - 3X - 3Y = 42$

Or  $2Z - X - Y = 42$  ..... (i)

The sum of the first two numbers is equal to the arithmetic mean of the last two.

$X + Y = (Y + Z)/2$

Or  $2X + 2Y = Y + Z$

Or  $2X + Y - Z = 0$

Or  $Z = 2X + Y$  ..... (ii)

Putting the value of Z in equation (i), we get:

$2(2X + Y) - X - Y = 42$

Or  $3X + Y = 42$

From Statement-1:

The second number, i.e. Y is given.

Thus, we can find the first number.

Thus, Statement 1 alone is sufficient to answer the question.

From Statement-2:

The arithmetic mean of the first and third numbers is given. That is,  $(X + Z)/2$  is known.

So, we have 3 equations and 3 unknowns. So, we can solve them for the value of X. Thus, we can find the first number.

Thus, Statement 2 alone is also sufficient to answer the question.

Hence, option (c) is correct.

**10 (d)**

Let speed of stream be  $x$  km/hr.

Speed of boat in still water = 22 km/hr

Downstream speed =  $22 + x$

Upstream speed =  $22 - x$

It takes him thrice as long to row up than to row down. As the distance covered by boat downstream is the same as the distance covered by that boat upstream,

Time taken by boat downstream / Time taken by boat upstream = Upstream speed/Downstream speed

Or  $1/3 = (22 - x)/(22 + x)$

Or  $22 + x = 3(22 - x)$

Or  $22 + x = 66 - 3x$

Or  $4x = 44$

Or  $x = 11$  km/hr

Thus, the speed of the stream is 11 km/hr.

Hence, option (d) is correct.

**11 (d)**

Distance between X and Y = 680 km

The ratio of the speeds of P and Q = 7:10

Here, time is constant. So, the distance covered by P and Q is directly proportional to the speeds of P and Q.

So, the ratio of the distance covered by P and Q = 7:10

Required distance =  $680 \times (10 - 7) / (7 + 10)$

=  $680 \times 3/17 = 120$  km

Thus, Q would cover 120 km more than P.

Hence, option (d) is correct.

**12 (b)**

Let man's age be  $6x$  and his wife's age be  $5x$ .

After 6 years,

Man's age =  $6x + 6$

Wife's age =  $5x + 6$

According to the question,

Or  $(6x+6)/(5x+6) = 7/6$

Or  $36x + 36 = 35x + 42$

Or  $x = 42 - 36$

Or  $x = 6$

So, Man's age =  $6x = 6 \times 6 = 36$  years

Wife's age =  $5x = 5 \times 6 = 30$  years

Let us assume that they were married 'm' years ago, then:

$(36-m)/(30-m) = 4/3$

Or  $3(36-m) = 4(30-m)$

Or  $108 - 3m = 120 - 4m$

Or  $m = 120 - 108$

Or  $m = 12$  years

Thus, they were married 12 years ago.

Hence, option (b) is correct.

**13 (b)**

Let 8 kg of first alloy and 11 kg of second alloy are mixed together.

In 8 kg of first alloy,

Quantity of gold =  $8 \times \frac{5}{8} = 5$  kg

Quantity of copper =  $8 \times \frac{3}{8} = 3$  kg

In 11 kg of second alloy,

Quantity of gold =  $11 \times \frac{3}{7} = \frac{33}{7}$  kg

Quantity of copper =  $11 \times \frac{4}{7} = \frac{44}{7}$  kg

Required ratio =  $(5 + \frac{33}{7}) : (3 + \frac{44}{7})$

=  $\frac{68}{7} : \frac{65}{7}$

= 68 : 65

Thus, the ratio of gold and copper in the newly formed alloy is 68:65.

Hence, option (b) is correct.

**14 (c)**

Let the number of selected candidates be  $3x$  and the number of unselected candidates be  $11x$ .

Total number of candidates that applied for the interview process =  $3x + 11x = 14x$

Number of selected candidates =  $3x - 34$

Number of candidates that applied =  $14x - 90$

So, Number of unselected candidates =  $(14x - 90) - (3x - 34) = 11x - 56$

According to the question,

$(3x - 34) / (11x - 56) = \frac{1}{4}$

Or  $4(3x - 34) = 11x - 56$

Or  $12x - 136 = 11x - 56$

Or  $12x - 11x = -56 + 136$

Or  $x = 80$

So, Number of candidates that applied for the job interview originally =  $14x = 14 \times 80 = 1120$

Hence, option (c) is correct.

**15 (a)**

Let 'x' number of candidates passed the exam.

Number of failed candidates =  $296 - x$

According to the question,

$89x + (296 - x) \times 57 = 296 \times 77$

Or  $89x + (296 \times 57) - 57x = 296 \times 77$

Or  $32x = (296 \times 77) - (296 \times 57)$

Or  $32x = 296 \times 20$

Or  $x = 296 \times 20 / 32 = 185$

Thus, 185 candidates passed the exam.

Hence, option (a) is correct.

**16 (c)**

Sum of the ages of P and Q,  $P + Q = 31 \times 2 = 62$  years .....(i)

Sum of the ages of R and Q,  $Q + R = 38 \times 2 = 76$  years .....(ii)

Sum of the ages of P and R,  $P + R = 42 \times 2 = 84$  years .....(iii)

From equations (i), (ii) and (iii), we get:

$2(P + Q + R) = 62 + 76 + 84 = 222$

Or  $P + Q + R = 222 / 2 = 111$  .....(iv)

From equations (i) and (iv), we get:

Age of R =  $111 - 62 = 49$  years

From equations (ii) and (iv), we get:

Age of P =  $111 - 76 = 35$

Thus, age of R is more than that of P by  $(49 - 35)$ , i.e. 14 years.

Hence, option (c) is correct.

17 (c)

Let 9 consecutive odd natural numbers, whose average is 'm', be:

$m-8, m-6, m-4, m-2, m, m+2, m+4, m+6, m+8$

When 4 more such numbers are considered, just next to the previous 9 numbers, the 13 numbers with us will be:

$m-8, m-6, m-4, m-2, m, m+2, m+4, m+6, m+8, m+10, m+12, m+14, m+16$

Required average of 13 numbers =  $[(m-8) + (m-6) + (m-4) + (m-2) + m + (m+2) + (m+4) + (m+6) + (m+8) + (m+10) + (m+12) + (m+14) + (m+16)] / 13$

$= (13m + 52) / 13$

$= m + 4$

Hence, option (c) is correct.

18 (c)

Let's assume that the batsman played 'n' innings before he got out of form, and his average at that time was 'x' runs.

Total runs scored by the batsman in n innings = 2014

Average score of batsman in 'n' innings,  $x = 2014/n$  .....(i)

Average score of batsman in (x+10) innings,  $x - 32 = (2014 + 132)/(n + 10)$

Or  $x - 32 = 2146/(n + 10)$

Or  $(2014/n) - 32 = 2146/(n + 10)$  [Since,  $x = 2014/n$ ]

$n = 19$  satisfies the above equation.

So, total innings played by the batsman =  $n + 10 = 19 + 10 = 29$

Hence, option (c) is correct.

19 (a)

**Option (a) is correct.** The given option is the best crux because of the lines “*Gender equality remains unfinished business in every country of the world*” and “*The progress that has been made towards gender equality over the past quarter of a century, though slow and incremental, does, however, show that change is possible.*” These lines show that situation of women could improve in future. So, the given option is the best crux.

**Option (b) is incorrect.** The context of patriarchal mindset is not a part of the passage. The passage does not contain any information on the patriarchal mindset being the cause of gender inequality. So, this statement is beyond the scope of the passage.

**Option (c) is incorrect.** Whether a country's progress is meaningful or meaningless vis-à-vis the contribution of female gender cannot be concluded from the information given in the passage. This statement is subjective, and the passage only mentions that gender inequality exists. So, this is not the best crux.

**Option (d) is incorrect.** The context of laws and policies for women's empowerment is not a part of the passage. So, this option is beyond the scope of the passage and therefore, it cannot be the best crux of the passage.

20 (d)

**Option (a) is not correct.** This statement reflects the view of a popular author, rather than that of the author of the passage. The passage says, “*Stock, author of books such as Material Girls: Why Reality Matters for Feminism (2021), has long been at the receiving end of criticism for her view that biological sex is more socially significant than gender identity, even though it does not exclude sympathy for the trans-rights movement*”. Hence, this is not the message of the passage.

**Option (b) is not correct** as it is not the view of the author or message of the passage. The author is just conveying a viewpoint of “trans-exclusionary radical feminists”, who think that females maybe at a risk of violence at the hands of trans-women.

**Option (c) is not correct.** The passage says, “*TERF or “trans-exclusionary radical feminist” refers to feminists whose advocacy for women's rights do not include the rights of transgender people, especially trans women*”. Hence, TERF activists do not advocate for the rights of transgenders.

**Option (d) is correct.** The passage revolves around the theme that a category of feminists excludes trans people when it comes to women rights. The passage says, “*TERF or “trans-exclusionary radical feminist” refers to feminists whose advocacy for women's rights do not include the rights of transgender people, especially trans women*”.



21 (a)

**Statement 1 is correct.** The passage clearly says, “*At the talk, Stock, 51, who quit her position at the University of Sussex in 2021 owing to sustained protests and accusations of transphobia against her, reiterated her views....*”. Hence, it is a correct statement.

**Statement 2 is not correct.** The passage clearly says, “*Even though the term gained currency in the early 2000s, it was born during the early 1970s feminist movement in the US*”. Hence, it is incorrect to say that it originated in the 21st century.

22 (d)

Arithmetic mean of five different numbers is 65.

So, sum of these five different numbers =  $65 \times 5 = 325$ .

From Statement 1:

There can be 1, 2, 3 or 4 numbers greater than 65, even if none of them is greater than 100.

So, Statement 1 alone is not sufficient to answer the question.

From Statement 2:

Three of the five numbers are 36, 44 and 56.

Sum of the given three numbers =  $36 + 44 + 56 = 136$

So, Sum of the remaining two numbers =  $325 - 136 = 189$

One or both of these numbers can be greater than 65.

So, Statement 2 alone is not sufficient to answer the question.

From Statement 1 and 2:

Sum of the remaining two numbers is 189, and none of them is greater than 100.

Thus, we can conclude that both of these numbers must be greater than 65, e.g. 90 and 99.

Hence, both the Statements are needed together to answer the question.

Hence, option (d) is correct.

23 (d)

From S1:

Train A usually goes 720 km in 10 hours. So, we can find the usual speed of the train. However, we cannot find the speed of the train when it's raining.

So, S1 alone is not sufficient to answer the question.

From S2:

When it's raining, it typically takes train A thrice the usual time. From this information we can't find the exact speed of the train when it's raining.

So, S2 alone is not sufficient to answer the question.

From Statement 1 and 2:

Ratio of the time taken when train A goes at usual speed and when it's raining = 1 : 3

So, Ratio of the usual speed of the train and when it's raining = 3 : 1

Usual speed of train =  $720/10 = 72$  km/hr

So, Speed of train when it's raining =  $72 \times 1/3 = 24$  k/hr

Time taken by train A to reach a town which is 576 km away when it's raining =  $576/24 = 24$  hr

Hence, both the Statements are needed together to answer the question.

Hence, option (d) is correct.

24 (b)

Let there be x, y and z number of students in the three sections - A, B and C of class X.

The average score of students in sections A, B and C of class X is 92, 84 and 70 respectively.

So, Total score of all students of section A =  $92x$

Total score of all students of section B =  $84y$

Total score of all students of section C =  $70z$

The average score of students in sections A and B together is 90.

So, Total score of all students in sections A and B together =  $90(x + y)$

Thus, we get:

$$92x + 84y = 90(x + y)$$

$$\text{Or } 2x = 6y$$

$$\text{Or } x:y = 6:2 = 3:1$$

The average score of students in sections B and C together is 78.

So, Total score of all students in sections B and C together =  $78(y + z)$

Thus, we get:

$$84y + 70z = 78(y + z)$$

$$\text{Or } 6y = 8z$$

$$\text{Or } y : z = 8 : 6 = 4 : 3$$

$$\text{So, } x : y : z = 12 : 4 : 3$$

$$\text{Average score for all students of class X} = (92x + 84y + 70z)/(x + y + z)$$

$$= (92 \times 12 + 84 \times 4 + 70 \times 3)/(12 + 4 + 3)$$

$$= 86.8 \text{ (approximately)}$$

Hence, option (b) is correct.

**25 (a)**

Let speed of the boat be  $x$  km/hr and the stream current be  $y$  km/hr.

A person covers a distance of 35 km in 1 hr 45 min along the stream.

$$1 \text{ hr } 45 \text{ min} = 7/4 \text{ hr}$$

$$\text{Time} = \text{Distance}/\text{Speed}$$

$$\text{Or } 7/4 = 35/(x + y)$$

$$\text{Or } x + y = 35 \times 4/7 = 20 \dots\dots (i)$$

$$\text{Distance covered against the stream} = (35/2) \text{ km}$$

Now, the time taken to cover the distance along the stream is 40% less than the time taken to cover the distance against the stream.

$$\text{So, } [(35/2)/(x - y)] \times (60/100) = (7/4)$$

$$\text{Or } [35/(x - y)] \times (3/10) = (7/4)$$

$$\text{Or } [7/(x - y)] \times (3/2) = (7/4)$$

$$\text{Or } 3/(x - y) = (1/2)$$

$$\text{Or } x - y = 6 \dots\dots (ii)$$

On solving (i) and (ii), we get:

$$y = 7 \text{ km/hr}$$

$$\therefore \text{Rate of river current} = 7 \text{ km/hr}$$

Hence, option (a) is correct.

**26 (a)**

$$\text{Quantity of alcohol in 1}^{\text{st}} \text{ mixture} = 7/(7+5) = 7/12$$

$$\text{Quantity of alcohol in 2}^{\text{nd}} \text{ mixture} = 3/(3+4) = 3/7$$

$$\text{Quantity of alcohol in resultant 3}^{\text{rd}} \text{ mixture} = 7/(7+6) = 7/13$$

Using Alligation method, we get:

1<sup>st</sup> mixture                      2<sup>nd</sup> mixture

$$7/12 \qquad \qquad \qquad 3/7$$

$$\swarrow \qquad \qquad \searrow$$

$$7/13$$

$$\swarrow \qquad \qquad \searrow$$

$$10 \qquad \qquad \qquad 7$$

$$\hline 7 \times 13 \qquad \qquad 12 \times 13$$

$$\text{Ratio of 1}^{\text{st}} \text{ and 2}^{\text{nd}} \text{ mixture} = [10/(7 \times 13)] : [7/(12 \times 13)] = 120 : 49$$

$$\therefore \text{The quantity of first mixture} = 169 \times [120/(120+49)] = 120 \text{ litres}$$

Hence, option (a) is correct.

**27 (d)**

Let's denote the five numbers as A, B, C, D, and E. We know that the average of these five numbers is 12.

So, we can write the following equation:

$$(A + B + C + D + E) / 5 = 12$$

Next, we are told that if one number is multiplied by 2, and another number is multiplied by 3, the new average becomes 18. But here all the 5 numbers are unknown, and it is not mentioned which number is multiplied by 2 and which number is multiplied by 3. Thus, the average of the two multiplied numbers cannot be determined using the given information.

Hence, option (d) is correct.

28 (c)

Time taken by Usha to cover 100 m =  $100/4$  (time = distance/speed)  
 = 25 s  
 So, Dutee covers  $(100 - 5.5)$  m = 94.5 m in  $(25 + 2)$  sec = 27 sec.  
 $\therefore$  Dutee's speed = distance/speed =  $94.5/27 = 3.5$  m/s.  
 Hence, option (c) is correct.

29 (a)

**Option (a) is correct.** The entire passage revolves around the theme of how big oil corporations are lobbying in international environmental summits, and probably getting decisions in their favour. For example, the passage says, "*Their presence could unduly influence the outcome of the United Nations Framework Convention on Climate Change (UNFCCC) meeting of the Subsidiary Bodies (SB58) aimed at discussing climate finance, adaptation, operationalising the loss and damage fund and the global stocktake*". **Hence, it is the correct option.**

**Option (b) is not correct.** Though they influence the decision-makers, the passage nowhere mentions that lobbyists out power policymakers. **Hence, it is not a correct option.**

**Option (c) is not correct.** The lobby of large oil corporations may influence international summits and get things done in their favour, but the passage does not mention that it causes any kind of harm to developing countries. **Hence, it is not a correct option.**

**Option (d) is not correct.** The passage mentions, "*The top five oil and gas majors in the European Union (EU) and the United States, namely Shell, BP, ExxonMobil, Chevron and Total Energies, had 403 lobbyists registered from the 21st Conference of the Parties of the UNFCCC (COP21) to COP27.*" It does not mention that they are responsible for most of the carbon emissions. It only mentions their clout through lobbyists. **Hence, it is not a correct option.**

30 (d)

**Statement 1 is not correct.** Though it may be factually correct, the passage nowhere mentions that global warming is the most harmful for the least developed countries. It does not find mention in the passage. **Hence, it is not a correct statement.**

**Statement 2 is not correct.** The passage says, "*The aforementioned organisations believe that lobbyists are there at Bonn to push the agenda of fossil fuel expansion forward to continue to rake in profits*". However, this does not imply that the only objective of these lobbyists is to make profit at the cost of the poor. **Hence, it is not a correct statement.**

31 (d)

Let the number of male employees in P be  $x$ .

So, Number of female employees in P =  $120x/100 = 6x/5$

Total number of employees in P =  $x + 6x/5 = 11x/5$

Let the number of male employees in Q be  $y$ .

So, Number of female employees in Q =  $(62.5/100)y = 5y/8$

Total number of employees in Q =  $y + 5y/8 = 13y/8$

As per the question,

$$(11x/5) - (13y/8) = 15000$$

$$\text{Or } 88x - 65y = 600000$$

There are two variables and one equation, so we can't solve it.

Hence, option (d) is correct.

32 (a)

Let Raman's speed in still water be ' $x$ ' and speed of stream be ' $y$ '.

Upstream speed of Raman's boat =  $x - y = 80/4 = 20$  km/hr

Thus,  $x - y = 20$  km/hr

Speed of speedboat in still water = 40 km/hr

Upstream speed of speedboat =  $40 - y$

Speed boat starts after 2 minutes of Raman's departure and crosses him after 5 minutes.

It implies that the speed boat covered the same distance in 5 minutes that Raman took 7 minutes to cover.

Hence, the ratio of the upstream speeds of Raman and Speedboat =  $(x - y)/(40 - y) = 5/7$

Or  $20/(40 - y) = 5/7$  [Since,  $x - y = 20$  km/hr]  
 Or  $140 = 200 - 5y$   
 Or  $5y = 200 - 140 = 60$   
 Or  $y = 60/5 = 12$  km/hr  
 Since,  $x - y = 20$  km/hr  
 Raman's speed in still water,  $x = 20 + y = 20 + 12 = 32$  km/hr  
 Hence, option (a) is correct.

**33 (d)**

Quantity of milk in 1<sup>st</sup> tank =  $120 \times 7/12 = 70$  litres  
 Quantity of water in 1<sup>st</sup> tank =  $120 \times 5/12 = 50$  litres  
 Quantity of milk in 2<sup>nd</sup> tank =  $135 \times 4/9 = 60$  litres  
 Quantity of water in 2<sup>nd</sup> tank =  $135 \times 5/9 = 75$  litres  
 So, Quantity of milk in final mixture =  $70 + 60 = 130$  litres  
 And Quantity of water in the final mixture =  $50 + 75 = 125$  litres  
 When 15 litres of water is added to the whole.  
 New quantity of water in the final mixture =  $125 + 15 = 140$  litres  
 Required ratio =  $130 : 140 = 13 : 14$   
 Hence, option (d) is correct.

**34 (d)**

Speed downstream =  $(x+4)$  km/h.  
 Speed upstream =  $(x-4)$  km/h.  
 Since, time = distance/speed ,  
 So, Downstream time =  $6(x+4)$  and  
 Upstream time =  $6(x-4)$  .  
 So,  $6(x+4) + 6(x-4) = 2$   
 $\Rightarrow 3(x+4) + 3(x-4) = 1$   
 $\Rightarrow x^2 - 6x - 16 = 0$   
 $\Rightarrow (x - 8)(x + 2) = 0$   
 $\Rightarrow x = 8,$   
 or  $x = -2$  (negative value, not acceptable).  
 Hence, speed of the cargo ship in still water = 8 km/h.  
 Hence, option (d) is correct.

**35 (c)**

Since Amar and Deepak are moving in the same direction along the circular path, so they will first meet each other when there is a difference of one round between the two.

Relative speed of Amar and Deepak =  $5 - 2$

= 3 rounds per hour.

$\therefore 3 \text{ rounds} = 1 \text{ hour}$

$\therefore 1 \text{ round} = 1/3 \text{ hour}$

= 20 minutes.

So, the time taken to complete one round at this relative speed = 20 minutes.

So, they shall first cross each other at 6:20 PM.

Hence, option (c) is correct.

**36 (c)**

Just look at the white bars. White dice was rolled 19 times.

So, the average =  $(1 + 1 + 1 + 2 + 2 + 2 + 3 + 3 + 3 + 3 + 4 + 4 + 4 + 5 + 5 + 5 + 6 + 6 + 6)/19 = 66/19 = 3.47$

Hence, option (c) is correct.

37 (d)

Let usual speed of the scooty be 'y' km/hr.

When he covers the same distance via route 2, his speed increases by 10 km/hr, and he takes 3 hours less time.

$$\text{So, } 60/y - 60/(y + 10) = 3$$

On solving the above equation, we get:

$$y = 10 \text{ km/hr}$$

Thus, his usual speed is 10 km/hr.

Checking Statement 1:

$$\text{Time taken to cover 60 km distance via route 1} = 60/10 = 6 \text{ hr}$$

$$\text{Time taken to cover 60 km distance via route 2} = 60/(10 + 10) = 3 \text{ hr}$$

$$\text{Time taken to cover 60 km distance via route 3} = 60/(10 - 5) = 12 \text{ hr}$$

Thus, statement 1 is not correct.

Checking Statement 2:

Ratio of the speeds via route 1 and route 2 is 1:2.

Thus, statement 2 is also incorrect.

Hence, option (d) is correct.

38 (b)

Let speed of the local train be x km/hr.

Then, the speed of the express train will be 1.4x km/hr.

According to the question,

$$(84/x) - (84/1.4x) = 30/60$$

$$\text{Or } x = 48 \text{ km}$$

$$\text{Speed of the express train} = 1.4x = 48 \times 1.4 = 67.2 \text{ km/hr}$$

Hence, option (b) is correct.

39 (a)

**Option (a) is correct.** Eradication of polio is the central theme of the passage. The passage revolves around the theme of how African countries, with the help of the world bank are implementing the schemes to eradicate polio. The passage also mentions, "*Eradicating polio requires immunising every child until transmission stops.*" **Hence, it is the correct option.**

**Option (b) is not correct.** The passage says, "*All polio cases in West and Central Africa are due to circulating vaccine-derived poliovirus — the final strain of polio remaining on the African continent; these outbreaks are rare*". Though it is a correct statement, it is a part of the main theme and not the main theme of the passage. The passage revolves around the theme of how African countries, with the help of the world bank are implementing the schemes to eradicate polio. **Hence, it is not a correct option.**

**Option (c) is not correct.** The passage deals with polio cases in Africa and how governments there are taking initiatives to eradicate polio. It does not mention about the rest of the world. **Hence, it is not a correct option.**

**Option (d) is not correct.** The passage mentions, "*This is a crucial undertaking to close vaccination gaps in the wake of the COVID-19 pandemic and will provide millions of children with vital protection from the risk of irreversible polio paralysis*". This implies that a pandemic can cause a temporary pause in the vaccination programs, but it is not the central theme of the passage. **Hence, it is not a correct option.**

40 (b)

**Statement 1 is not correct.** The passage says, "...three countries — Cameroon, Chad and Niger — kicked off Africa's largest polio vaccination campaign since 2020, according to World Health Organization (WHO)". This implies that it is not the largest ever polio eradication program, but the largest, post the pandemic of Covid-19. **Hence, it is not a correct statement.**

**Statement 2 is not correct.** The passage clearly mentions, "*Polio is a highly infectious viral disease that primarily affects children under five years and causes permanent paralysis or death*". It does not mean that it affects children only under 5. **Hence, it is not a correct statement.**

**Statement 3 is correct.** The last line of the passage clearly mentions, "*There is no cure, but safe and effective vaccines can protect children. Eradicating polio requires immunising every child until transmission stops*". **Hence, it is a correct statement.**



41 (d)

**Statement 1 is correct.** The passage says, "To achieve global net zero goals and garner the public support required for this, it is imperative in the long-term to view emissions within the larger context of global consumption and production patterns". **Hence, it is a correct statement.**

**Statement 2 is correct.** The passage says, "Consumption and production patterns vary greatly based on the cultural, social, and economic factors. But both consumption and production ethics also vary due to beliefs, values and traditions". **Hence, it is a correct statement.**

**Statement 3 is correct.** It is mentioned in the passage, "This may lead to the undermining of local economies and often leads to social and environmental degradation. To avoid this, local producers need to have access to fair markets and fair prices so that they can invest in alternative, environmentally friendly production methods". This implies that when poorer countries get direct access to markets, this can lessen their exploitation at the hands of developed countries. **Hence, it is a correct statement.**

42 (c)

P's initial speed = 4 m/sec

Q's initial speed = 16 m/sec

Time taken to meet for the first time =  $400/(4 + 16) = 20$  sec

After 1st meet,

P's speed = 8 m/sec

Q's speed = 8 m/sec

Time taken to meet for the second time =  $400/(8 + 8) = 25$  sec

After 2nd meet,

P's speed = 16 m/sec

Q's speed = 4 m/sec

Time taken to meet for the third time =  $400/(16 + 4) = 20$  sec

Total time taken to meet for the third time =  $20 + 25 + 20 = 65$  sec

Hence, option (c) is correct.

43 (b)

The average of 17 numbers is 19.

So, Sum of 17 numbers =  $17 \times 19 = 323$

Now, if we multiply each number by 5, the sum of the new set of numbers =  $323 \times 5 = 1615$ .

Since, there are still 17 numbers in the new set, so new average =  $1615/17 = 95$

Hence, option (b) is correct.

44 (c)

Sum of the weights of 11 players =  $160 \times 11 = 1760$  pounds

If the heaviest player is removed, the average weight of the remaining 10 players becomes 158 pounds.

Sum of the weights of 10 players =  $158 \times 10 = 1580$  pounds

So, Weight of the heaviest player =  $1760 - 1580 = 180$  pounds

Hence, option (c) is correct.

45 (a)

The median of a set of numbers is the middle number in the set (after the numbers have been arranged from least to greatest) - or, if there are an even number of data, the median is the average of the middle two numbers. To determine if the median is greater than 60, we need to know the specific values of the numbers in the set. Let's analyze the statements:

Statement 1: The sum of the smallest and largest numbers in the set is 150.

The average of a set of 7 numbers is 40. So, their sum total =  $7 \times 40 = 280$

So, the sum total of the middle 5 numbers =  $280 - 150 = 130$

If the middle of these 5 numbers is 60, then two other numbers must also be above 60. This is not possible. So, it's clear that the median of the set cannot be greater than 60.

So, Statement 1 alone is sufficient.

Statement 2: The range of the set is 80.

The range is the difference between the largest and smallest numbers in the set. This statement alone doesn't give any information about the values between the largest and smallest numbers.

So, Statement 2 alone is insufficient.

Hence, option (a) is correct.



**46 (d)**

Since A wins the race over B by 400 m, the distance covered by B =  $3600 - 400 = 3200$  m

Ratio of the distances covered by A and B =  $3600 : 3200$

B can give a head start of 900 m to C in such a race.

So, Distance covered by C =  $3600 - 900 = 2700$  m

Ratio of the distances covered by B and C =  $3600 : 2700 = 4 : 3$

$= (4 : 3) \times 800 = 3200 : 2400$

Ratio of the distances covered by A, B and C =  $3600 : 3200 : 2400$

So, to finish the race at the same time, A should give C a head start of  $3600 - 2400 = 1200$  m

Hence, option (d) is correct.

**47 (b)**

Speed of boat in still water = 7 km/hr.

Speed of the stream = 1 km/hr.

So, Downstream speed of the boat =  $7 + 1 = 8$  km/hr.

And, Upstream speed of the boat =  $7 - 1 = 6$  km/hr.

We know that, Upstream speed of the boat/Downstream speed of the boat = Time taken in covering downstream distance/ Time taken in covering upstream distance

Or  $6/8 = \text{Time taken in covering downstream distance} / \text{Time taken in covering upstream distance}$

Or Time taken in covering downstream distance/ Time taken in covering upstream distance =  $3/4$  ..... (i)

Now, Time taken in covering downstream distance + Time taken in covering upstream distance = 84

Or  $1 + [\text{Time taken in covering upstream distance} / \text{Time taken in covering downstream distance}] = 84 / \text{Time taken in covering downstream distance}$

Or  $1 + (4/3) = 84 / \text{Time taken in covering downstream distance}$

Or  $7/3 = 84 / \text{Time taken in covering downstream distance}$

Or Time taken in covering downstream distance = 36 minutes

So, Time taken in covering upstream distance =  $(4/3) \times \text{Time taken in covering downstream distance} = (4/3) \times 36 = 48$  minutes

Total distance covered by the boat from P to Q and Q to P = [Downstream speed  $\times$  Time taken in covering downstream distance] + [Upstream speed  $\times$  Time taken in covering upstream distance]

$= [8 \times (36/60)] + [6 \times (48/60)]$

$= [8 \times (3/5)] + [6 \times (4/5)]$

$= 48/5$

$= 9.6$  km

Hence, option (b) is correct.

**48 (d)**

Speed of Aakash = 40 km/h.

Speed of Anil = 60 km/h.

Their relative speed =  $60 - 40$  (they are moving in the same direction)

$= 20$  km/h.

Distance travelled by Aakash in 30 minutes ( $1/2$  hour)

$= 40 \times 1/2$  (distance = speed  $\times$  time)

$= 20$  km.

So, the time taken by Anil to meet Aakash =  $\text{Distance} / \text{Relative speed}$

$= 20 / 20$

$= 1$  h.

Hence, the distance Anil need to cover = speed of Anil  $\times$  time needed

$= 60 \times 1$

$= 60$  km.

Hence, option (d) is correct.

49 (a)

Let the number of students in swimming class and dance class be  $13x$  and  $8x$  respectively.

According to the question,

$$13x - 8x = 25$$

$$\text{Or } 5x = 25$$

$$\text{Or } x = 25/5 = 5$$

$$\text{So, Total number of students in swimming class} = 13 \times 5 = 65$$

$$\text{Total number of students in class dance class} = 8 \times 5 = 40$$

$$\text{Number of girls in swimming class} = 65 \times 8/(5 + 8) = 40$$

$$\text{Number of girls in dance class} = 40 \times 3/(2 + 3) = 24$$

$$\text{So, Required ratio} = 40:24 = 5 : 3$$

Hence, option (a) is correct.

50 (c)

Difference between the B's monthly income and his savings is Rs.18000.

$$\text{Expenditure} = \text{Income} - \text{Saving} = 18000$$

Thus, B's expenditure is Rs. 18000.

$$\text{Savings of B} = 18000 \times 160\% = \text{Rs. } 28800$$

$$\text{Thus, B's monthly income} = \text{Savings} + \text{Expenditure} = 28800 + 18000 = \text{Rs. } 46800$$

$$\text{So, A's monthly income} = 46800 \times 4/5 = 37440$$

$$\text{And C's monthly income} = 46800 \times 7/9 = 36400$$

$$\text{Average of the incomes of A, B and C} = (37440 + 46800 + 36400)/3 = \text{Rs. } 40,213 \text{ (approx)}$$

Hence, option (c) is correct.

51 (b)

**Statement 1 is not correct.** The passage clearly says, "*Reported violence against or obstruction of health care decreased in the Central African Republic, Ethiopia and Syria in 2022 compared to 2021*". In many countries, the incidence of violence has actually decreased. **Hence, it is not a correct statement.**

**Statement 2 is correct.** According to the passage, healthcare workers have faced attacks in Ukraine (Europe), Myanmar and Syria (Asia) and Africa. Hence, it can be inferred that they faced violent reaction in at least three continents. **Hence, it is a correct statement.**

52 (b)

**Statement 1 is not correct.** The passage says, "*Over half of the total attacks were reported in just two countries, Ukraine and Myanmar, the report stated*". It does not mention that the largest number of attacks were witnessed in Myanmar. **Hence, it is not a correct statement.**

**Statement 2 is correct.** The passage clearly mentions, "*Over the last year, we identified a 45 percent increase in reported incidents of violence against or obstruction of health care in conflict zones as compared to 2021,*". Therefore, it is correct to say that attacks against healthcare personnel have increased by less than 50% (45%). **Hence, it is a correct statement**

53 (c)

**Option (a) is incorrect.** The given option is not correct because the context of the criminal justice system is not a part of the passage. The option states that the cause of missing women is crime. However, the passage does not explain the cause of missing women in particular. Hence, this is not the best crux.

**Option (b) is incorrect.** The context of matriarchal society and whether it will lead to improvement in the status of women is not based on the information given in the passage. So, this option is beyond the scope of the passage and is not the best crux.

**Option (c) is correct.** The lines "... capture the fact that the proportion of women is lower than what would be expected if girls and women throughout the developing world were born and died at the same rate, relative to boys and men, as they do in sub-Saharan Africa" show that this issue exists in developing world and "Of these, 23 per cent are never born (violation of the right to life), 10 per cent are missing in early childhood, 21 per cent are in the reproductive years, and 38 per cent are above the age of 60. Stark as the excess mortality is, it still does not capture the fact that throughout their lives, even before birth, women in developing countries are treated differently than their brothers, lagging behind men in many domains", validate that women are not valued or are at loss as compared to men. The tone of the passage is descriptive rather than being solution-rendering. So, this option best reflects the crux of the passage.

**Option (d) is incorrect.** The lines “For each missing woman, many more women fail to get an education, a job, or a political responsibility that they would have obtained if they had been men”, explain that many women are not able to participate in education, politics, etc. To state that making changes in laws, and politics will improve the status of women would not be correct because the passage does not mention so. Hence, this is not the best crux of the passage.

54 (d)

**Assumption 1 is incorrect.** The passage only states that “Rapid digitalization in the past decade has led to the proliferation of domestic and foreign online communication services that use encryption and pose challenges to national security bodies and law enforcement agencies”, which does not mean that government should enhance its technological capabilities, and that too for surveillance. Hence, the given assumption is not correct as it is not based on the information given in the passage.

**Assumption 2 is incorrect.** The lines “To help overcome these challenges, the Indian government issued controversial new rules in February 2021 that require messaging communication providers to supply information regarding the originators of messages. Many providers argue that this requirement significantly weakens the end-to-end (E2E) encryption they deploy”, reflect that due to controversial rules, companies feel that they will weaken the encryption of communication. However, encryption is a more technical aspect rather than being directly related to business environment. Hence, this assumption is not correct based on the given passage.

55 (d)

Fuel Cost per hour = (Speed)<sup>2</sup>

Other cost per hour = Rs. 100

Let speed for 500 kilometre journey = X.

Time of journey = Distance/Speed = 500/X hours.

Cost of journey = (500/X) × 100 + (500/X) × X<sup>2</sup> = 500(100/X + X)

Option (a) Cost of journey may be 3000 when (100/X + X) = 6 (not possible).

Option (b) Cost at 40km/hr = 500 × (100/40 + 40) = 500 × 42.5

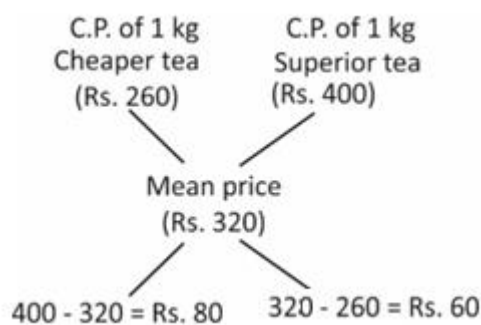
Cost of journey at 25 km/hr = 500 × (100/25 + 25) = 500 × 29 which is lower.

Option (c) Time can be anything depending on speed.

Option (d) For X = 10: Cost = 500 × 20 = Rs. 10000

56 (d)

Using Alligation method,



The required ratio of the two varieties of tea = 80:60 = 4:3.

∴ Quantity of the second variety of tea = 132 × 3/4 = 99 kg

Hence, option (d) is correct.

57 (d)

Let Sachin walks ‘d’ km to reach the bus stand.

Let usual time taken by him in reaching the bus stand be ‘t’ hours.

Since, time = distance/speed

So,  $d / 2 = t + 25 / 60$  .....(I)

or  $d / 4 = t - 10 / 60$  .....(II)

Subtracting (II) from (I), we get,

$$d = 35/15 = 7/3 \text{ km}$$

Hence, option (d) is correct.

**58 (b)**

Speed of faster train = 120 km/hr

Speed of slower train = 84 km/hr

Length of the faster train = 180 m

Let length of the slower train be 'x' m.

Time taken by the faster train to cross the slower train = Sum of the lengths of the two trains / Difference in their speeds

$$\text{Or } 30 = 180 + x / (120 - 84) \times 5 / 18$$

$$\text{Or } 30 = 180 + x / 36 \times (5 / 18)$$

$$\text{Or } 180 + x = 36 \times 30 \times 5 / 18$$

$$\text{Or } 180 + x = 300$$

$$\text{Or } x = 300 - 180$$

$$\text{Or } x = 120 \text{ m}$$

So, length of the slower train is 120 m.

Hence, option (b) is correct.

**59 (a)**

Total distance = length of the bullet train + length of platform = 210 + 190 = 400 m

Total distance covered = Speed of the bullet train  $\times$  Time

$$\text{Or } 400 = \text{Speed of the bullet train} \times 8$$

$$\text{Or Speed of the bullet train} = 400/8 = 50 \text{ m/sec}$$

$$= 50 \times 18/5 = 180 \text{ km/hr}$$

Hence, option (a) is correct.

**60 (a)**

Let the number of boys be  $4x$  and the number of girls be  $3x$ .

According to the question,

$$(4x + 10)/(3x + 15) = 10/9$$

$$\text{Or } 9(4x + 10) = 10(3x + 15)$$

$$\text{Or } 36x + 90 = 30x + 150$$

$$\text{Or } 36x - 30x = 150 - 90$$

$$\text{Or } 6x = 60$$

$$\text{Or } x = 10$$

$$\text{So, Number of boys} = 4x = 4 \times 10 = 40$$

$$\text{Number of girls} = 3x = 3 \times 10 = 30$$

$$\text{So, Number of boys} - \text{Number of girls} = 40 - 30 = 10$$

Hence, option (a) is correct.

**61 (c)**

Let Mr. Sharma's salary be Rs.  $x$ .

$$\text{Amount given to his father} = x \times 40/100 = 40x/100$$

$$\text{Remaining amount} = x - 40x/100 = 60x/100$$

$$\text{Amount invested in insurance and share market} = (60x/100) \times (40/100) = 24x/100$$

$$\text{Amount invested in share market} = (24x/100) \times (11/15) = 88x/500$$

$$\text{Remaining amount that he keeps in his bank account} = (60x/100) - (24x/100) = 36x/100$$

According to the question,

$$(36x/100) - (88x/500) = 46000$$

$$\text{Or } (180x - 88x)/500 = 46000$$

$$\text{Or } 92x/500 = 46000$$

$$\text{Or } x = 46000 \times 500/92$$

Or  $x = 2,50,000$

Thus, Mr. Sharma's salary in Rs. 2,50,000.

Hence, option (c) is correct.

62 (c)

Let's mix  $x$  units of alloy A with  $y$  units of alloy B.

Quantity of silver in alloy A =  $5x/8$

Quantity of copper in alloy A =  $3x/8$

Quantity of silver in alloy B =  $9y/16$

Quantity of copper in alloy B =  $7y/16$

According to the question,

$$(5x/8 + 9y/16) / (3x/8 + 7y/16) = 3/2$$

$$\text{Or } [(10x + 9y)/16] / [(6x + 7y)/16] = 3/2$$

$$\text{Or } (10x + 9y)/(6x + 7y) = 3/2$$

$$\text{Or } 2(10x + 9y) = 3(6x + 7y)$$

$$\text{Or } 20x + 18y = 18x + 21y$$

$$\text{Or } 20x - 18x = 21y - 18y$$

$$\text{Or } 2x = 3y$$

$$\text{Or } x:y = 3:2$$

Thus, these two alloys should be mixed together in the ratio of 3:2 to get a new alloy having silver and copper in the ratio 3:2.

Hence, option (c) is correct.

63 (c)

**Option (a) is incorrect.** The given option is not correct because of the line, "*Alternatively, relativistic cultural positions have been put forth mostly by socialization theories that focus on how cultures transmit values rather than what values are applied across groups and individuals.*" This line shows that culture too may have a role in moral development. Hence, this option is not the best crux of the passage.

**Option (b) is incorrect.** Whether socialization is the most important tool in moral development or not cannot be concluded on the basis of the given passage. So, this option is beyond the scope of the passage and is not correct.

**Option (c) is correct.** The given option best reflects the crux, as evident in the lines "*Many research traditions have examined this question, with social-cognitive and structural-developmental positions theorizing that morality has a **universal requirement to it**, drawing from moral philosophy.*" and "*Alternatively, relativistic cultural positions have been put forth mostly by socialization theories that focus on how cultures transmit values rather than what values are applied across groups and individuals.*" So, this option is the best crux of the passage.

**Option (d) is incorrect.** The passage does not make any comparison between universal moral values and moral values developed through socialization. Therefore, to conclude that universal moral values are stronger would not be correct. Hence, this is not the best crux.

64 (d)

**Assumption 1 is incorrect.** Only the private sector's role is mentioned in the passage; the role of the government in the context of promoting startups is not discussed in the passage. So, this assumption is not correct.

**Assumption 2 is incorrect.** The lines, "*This is due, in part, to constraints in sharing knowledge and lessons learned among countries and regions of the Global South*", show that poor knowledge and lesson sharing is a major challenge, but only to this specific region of the global south. However, to extrapolate it across the globe would not be correct. So, this assumption is not correct.

65 (d)

**Option (a) is incorrect.** The lines "*This is due, in part, to constraints in sharing knowledge and lessons learned among countries and regions of the Global South. As a result, agricultural solutions have failed to achieve the wider impact that could modernize and transform the continent's agricultural and food industry sectors*", verify that lack of knowledge and lesson sharing is only a part, and the *only* restriction with modernizing and transforming of the agricultural sector. Hence, this is not the best crux.

**Option (b) is incorrect.** The context of startups is very limited in the passage, as seen in the lines "*Startups led by the private sector are tackling issues ranging from access to markets to the provision of*



*financial services.*” Also, to say that, “Startups in the field of agriculture can solve the core persisting issues of agriculture” would not be correct, as other issues also persist that maybe beyond the scope of startups, e.g. knowledge sharing between countries. So, this option cannot be the best crux or the core theme of the passage.

**Option (c) is incorrect.** The context of all countries across the world investing in agricultural technology is not a part of the passage. So, this option is beyond the scope of the passage.

**Option (d) is correct.** As per the passage, *“This is due, in part, to constraints in sharing knowledge and lessons learned among countries and regions of the Global South. As a result, agricultural solutions have failed to achieve the wider impact that could modernize and transform the continent's agricultural and food industry sectors.”* These lines show that sharing knowledge and lessons is important for agricultural solutions in the global south. So, sharing knowledge and lessons will help harness the potential of agriculture. Hence, option is the closest to being the crux of the passage.

66 (c)

From S1:

The average of the consecutive integers from X to Y, including both, will always be equal to the average of the integers X and Y, since the elements in the sum are consecutive.

For example, the average of the numbers 1 to 4 is 2.5, which equals  $(1 + 4)/2 = 2.5$ .

Hence, S1 alone is sufficient to answer the question.

From S2:

The average of the consecutive integers between m and n not including either is the same as the average including them, since the elements in the sum are consecutive.

For example, the average of the numbers 2 and 3 is 2.5, which equals  $(1 + 2 + 3 + 4)/2 = 2.5$ .

Hence, S2 alone also answers the question.

So, either S1 alone or S2 alone is sufficient to answer the question.

Hence, option (c) is correct.

67 (d)

S1 gives information only about income. While, S2 gives information only about expenditure.

Hence, neither statement alone is sufficient to answer the question.

Using both the statements together:

The ratio of incomes of Mr. X in the years 2022 and 2023 is 3 : 4.

The ratio of his expenditures in the years 2022 and 2023 is 5 : 6.

Even from the above information, we cannot find the ratio of Mr. X's savings in the year 2022 to that in the year 2023.

Therefore, even the two statements together are not sufficient to answer the question.

Hence, option (d) is correct.

68 (c)

Suppose they meet 'h' hours after 11 AM.

Thus, Distance moved by the train from X in 'h' hours + Distance moved by the train from Y in (h+1) hours

= 1000

$\Rightarrow 50h + 100(h+1) = 1000$  (distance = speed  $\times$  time)

$\Rightarrow 150h = 900$

$\Rightarrow h = 6$  hours

So, they meet 6 hours after 11 AM, i.e. at 5 PM.

Hence, option (c) is correct.

69 (a)

Since the average of 20 numbers is zero, it means that their sum must be zero.

To ensure maximum positive numbers, we can have 19 positive numbers and the magnitude of the 20<sup>th</sup> negative number may be equal to the sum of these 19 positive numbers.

Hence, option (a) is correct.



**70 (b)**

The average age of 11 players is 32 years.

Sum of the ages of 11 players =  $32 \times 11 = 352$  years

From Statement-1:

The captain is 16 years older than the youngest player.

Age of the captain = Age of the youngest player + 16

Statement 1 alone is not sufficient to answer the question.

From Statement-2:

The average age of 10 players other than the captain is 31.5 years.

So, Sum of the ages of 10 players other than the captain =  $31.5 \times 10 = 315$  years

So, age of the captain =  $352 - 315 = 37$  years

Thus, Statement 2 alone is sufficient to answer the question.

From Statement-3:

Leaving aside the captain and the youngest player, the average ages of the three groups of three players each are 35 years, 33 years and 30 years respectively.

Sum of the ages of 9 players other than the captain and the youngest player =  $35 \times 3 + 33 \times 3 + 30 \times 3 = 294$

So, Sum of the ages of the captain and the youngest player =  $352 - 294 = 58$  years

Thus, Statement 3 alone is not sufficient to answer the question.

From Statements 1 & 3:

Age of the captain = Age of the youngest player + 16

Or Age of the captain - Age of the youngest player = 16 years .....(i)

Sum of the ages of the captain and the youngest player = 58 years .....(ii)

From equation (i) & (ii), we get:

Age of the captain =  $(58 + 16)/2 = 37$  years

Thus, Statements 1 & 3 together are sufficient to answer the question.

Hence, option (b) is correct.

**71 (d)**

We cannot solve the question using either statement alone.

From Statement 1 and 2:

$70/(\text{Speed of boat} + 2) + 70/(\text{Speed of boat} - 2) = 12$

or Speed of boat = 12 km/hr

Hence, both the statements are needed together to answer the question.

Hence, option (d) is correct.

**72 (a)**

Time taken to cover 2500 km

=  $2500 \text{ km} / 100 \text{ km/h}$  (time = distance / speed)

= 25 h.

Number of stoppages = Total distance / 125 - 1

=  $2500 / 125 - 1$

=  $20 - 1 = 19$

Total time of stoppage =  $19 \times (5 \text{ min}) = 95 \text{ min}$

Hence, total time taken = 25 h + 95 min

= 25 h + (1 h + 35 min)

= 26 h 35 min.

Hence, option (a) is correct.

**73 (a)**

**Inference 1 is correct.** The lines “It is a matter of concern that despite huge investments, our cities still face many efficiency-and sustainability-related challenges. None of our cities features among the top 50 cities in many global rankings”, show that global rankings contain those cities which are efficient and

sustainable. Therefore, it would be correct to infer that the presence or absence of cities in global rankings reflect their efficiency and sustainability.

**Inference 2 is incorrect.** As per the passage, there is no issue of poor investment; rather this claim is contradicted by the line “It is a matter of concern that *despite huge investments*, our cities still face many efficiency-and sustainability-related challenges”. Hence, this inference about poor investments is not correct.

74 (a)

**Option (a) is correct.** The lines, “As India reaches a tipping point of transitioning from a mostly rural to an urban society, the focus must be on ensuring the *best opportunities for economic growth for all sections of the society (inclusive growth)*” and “The *need of the hour is incisive, insightful planning* – in the absence of which neither investments nor actions would be able to yield a long-term solution”, show that city planning should be insightful. Also, planned urban spaces are a must for the growth of all the sections ensuring inclusive growth. Hence, this option best reflects the crux of the passage.

**Option (b) is incorrect.** Replanning of each city is not a part of the passage. To conclude that due to the increasing load on cities, replanning each city is necessary would not be correct.

**Option (c) is incorrect.** This option is beyond the scope of the passage, because the passage nowhere mentions that India should aim to get its cities in the top 50 global rankings.

**Option (d) is incorrect.** The idea that unplanned urbanization would lead to poverty and loss of GDP, etc. cannot be concluded on the basis of the given passage. Hence, this option is beyond the scope of the passage, and so cannot be the correct crux.

75 (b)

**Inference 1 is incorrect.** The passage does not mention that the unclear mechanism of SDGs is the cause of hunger in the world. Hence, this option is beyond the scope of the passage and is not correct.

**Inference 2 is correct.** The line “Food security exists when all people have physical and economic access to sufficient, safe, and nutritious food”, shows that food security is not only about sufficient food, but also about safe and nutritious food. Therefore, the inference that only consuming sufficient calories will not solve the challenges related to food security is correct.

76 (b)

**Option (a) is incorrect.** The given option is not the best crux because it is beyond the scope of the passage. The passage nowhere mentions that food security issues can be solved by sharing information on available food resources across nations.

**Option (b) is correct.** The given option is the best crux because of the lines, “But how to achieve this goal is debated controversially. Genetically modified (GM) crops are sometimes mentioned in this connection. Some see the development and use of GM crops as key to reducing hunger while others consider this technology as a further risk to food security. Solid empirical evidence to support either of these views is thin”. These lines describe that GM crops can help in food sufficiency; however the safety issue persists. However, neither of these views can be substantiated due to the lack of empirical studies. Therefore, to state that before going for mass production the debate around safe use should be concluded is correct as per the passage.

**Option (c) is incorrect.** The given option is based on the lines “Some see the development and use of GM crops as key to reducing hunger while others consider this technology as a further risk to food security. Solid empirical evidence to support either of these views is thin.” The passage mentions that there is no evidence of food sufficiency or safety from GM crops, and to conclude and say that it guarantees quantity and not safety is not correct.

**Option (d) is incorrect.** The context of organic farming is not covered in the passage. Hence, this option is beyond the scope of the passage.

77 (c)

The total score of those 9 students =  $9 \times 78 = 702$ .

The expected total score of the entire class =  $10 \times 80 = 800$ .

Therefore, the last student needs a score of  $800 - 702 = 98$ .

Hence, option (c) is correct.

**78 (d)**

$$(b + 1 + 1)/2 = (b + 4 + 4 + 2)/3$$

$$\text{Or } 3b + 6 = 2b + 20$$

$$\text{Or } b = 14$$

Hence, option (d) is correct.

**79 (c)**

Maximum possible number of graduates who are fresh out of college = 70 (considering all are fresh graduates)

Minimum possible number of graduates who are fresh out of college = 30 (considering all 50 non graduates are fresh from college)

Required ratio = 3:7

Hence, option (c) is correct.

**80 (d)**

$$x = (r + 11)/2$$

$$y = (3r + 19)/2$$

$$z = (5r + 20)/2$$

$$x + y + z = (r + 11 + 3r + 19 + 5r + 20)/2$$

$$\text{or } x + y + z = (9r + 50)/2 = 4.5r + 25$$

Hence, option (d) is correct.

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