

**UPSC Prelims Question Paper 2024
General Studies Paper II (CSAT)**

A

Answer Key

| | | | | |
|-------|-------|-------|--------|--------|
| 1. b | 17. d | 33. c | 49. d | 65. c |
| 2. a* | 18. c | 34. a | 50. c | 66. d |
| 3. c | 19. b | 35. d | 51. b | 67. a |
| 4. d | 20. c | 36. b | 52. a* | 68. d |
| 5. b | 21. d | 37. a | 53. c | 69. c |
| 6. d | 22. c | 38. c | 54. c | 70. d |
| 7. c | 23. d | 39. d | 55. c | 71. a* |
| 8. c | 24. c | 40. c | 56. c | 72. d |
| 9. d | 25. a | 41. c | 57. d | 73. a |
| 10. b | 26. b | 42. d | 58. d | 74. c |
| 11. a | 27. d | 43. a | 59. c | 75. d |
| 12. a | 28. b | 44. a | 60. c | 76. d |
| 13. b | 29. a | 45. b | 61. a | 77. a |
| 14. c | 30. d | 46. b | 62. d | 78. d |
| 15. b | 31. d | 47. d | 63. c | 79. b |
| 16. a | 32. b | 48. a | 64. c | 80. b |

Answers with Explanation

1. Answer: (b)

Explanation:

- **Inference 1 is incorrect:** This statement is not supported by the passage. The passage mentions “*Food is lost or wasted throughout the supply chain, from initial agricultural production to final household consumption ... Addressing the loss and wastage of food in all forms is critical to completing the cycle of food efficiency and food sustainability*”. This suggests that food loss and wastage occur throughout the supply chain, from production to household consumption, and not solely due to distribution methods.
- **Inference 2 is correct:** Land productivity is based on the quality of land. The passage mentions that due to wastage, the quality of the land degrades. This means that wastage increases land degradation, which adversely affects land productivity. This inference can be drawn from the lines, “*The increasing wastage also results in land degradation by about 45%, mainly due to deforestation, unsustainable agricultural practices, and excessive groundwater extraction*” which can be exacerbated by food loss and waste.
- **Inference 3 is correct:** This statement is supported by the passage, which mentions that the energy spent on wasted food results in significant carbon dioxide production- Consider the line, “*The energy spent over wasted food results in about 3.5 billion tonnes of carbon dioxide production every year. Decay also leads to harmful permissions of other gases in the atmosphere.*” Therefore, reduction in food loss and waste would reduce the carbon footprint.
- **Inference 4 is incorrect:** This statement is not supported by the passage. The passage does not discuss the non-availability of post-harvest technologies. It is also common knowledge, that various technologies and methods exist to reduce food loss and waste after harvest.

2. Answer: (a*)

Explanation:

- **Assumption 1 is valid:** The passage mentions that food is lost or wasted throughout the supply chain. While it does not specifically single out the distribution mechanism, it implies that improvements across the entire supply chain, **including distribution**, would help reduce food wastage. Therefore, this assumption is reasonable and valid.
- **Assumption 2 is invalid:** The passage does not explicitly suggest this. The passage focusses on the environmental and economic impacts of food wastage and the need to address it to achieve food efficiency and sustainability. While one could argue that addressing food wastage is indeed a social and moral responsibility, the passage does not provide explicit support for this assumption. Further, the residents of a nation or locality include members who are not citizens, as well. Therefore, it seems that pinning the responsibility on citizens is not the intention of the author.
**However, there is a possibility that assumption 2 be taken as valid: The passage primarily discusses the loss and wastage of food and its impact on the environment and on humans. Although the passage does not explicitly connect the social and moral duty of citizens to reduce wastage and loss of food, it does bring in the aspect and mention “household consumption” as well, which indicates a moral and social responsibility on citizens. Therefore, they too must ensure the reduction of wastage and loss of food.*

3. Answer: (c)

Explanation:

- **Inference 1 is correct:** The passage suggests that higher interest rates announced by central banks are meant to help produce fiscal austerity. However, without fiscal backing (i.e., the government cutting spending or raising taxes), monetary policy loses effectiveness, and higher interest rates

could even become inflationary. This implies that budgetary backing is crucial for central banks to control inflation.

- **Inference 2 is correct:** Consider the lines from the passage, “Without the fiscal backup, monetary policy eventually loses traction.” and “The risk of monetary unmooring is greater when public debt rises”. The passage therefore clearly states that without the fiscal backup, monetary policy eventually loses traction as higher interest rates can lead to more borrowings by the government to pay for the rising debt-service costs. This indicates that the effectiveness of monetary policy is heavily influenced by the fiscal policies of the government.

4. **Answer: (d)**

Explanation:

- **Assumption 1 is invalid:** The passage discusses how government spending and fiscal policies interact with monetary policies and interest rates to impact inflation and does not suggest that fiscal policies are solely responsible for higher prices. The passage suggests how monetary policy also impacts inflation in the lines, “Higher interest rates are announced by central banks....Higher interest rates become inflationary”.
- **Assumption 2 is invalid:** The passage does not mention the impact or interaction between (long-term) government bonds and higher prices.

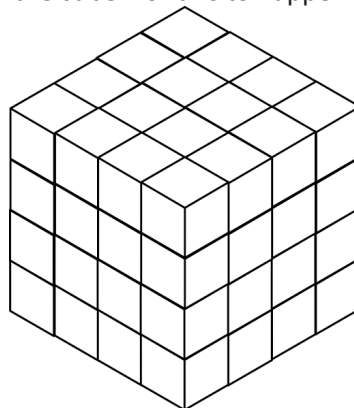
5. **Answer: (b)**

Explanation:

Let n be the number of cubes on each edge of the cube. $n^3 = 64$

or $n = 4$

So, there are 4 cubes on each edge of the cube. For this to happen we need to cut each edge 3 times.



This can be achieved by cutting the cube 3 times along each of the three axes – x , y and z . So, the total number of minimum possible cuts required = $3 + 3 + 3 = 9$

6. **Answer: (d)**

Explanation:

$$5 - 4 - 3 + 2 \times 1$$

$$= 5 - 4 - 3 + 2$$

$$= 0$$

7. **Answer:(c)**

Explanation:

Let the number of men in the first and second instances be m and n respectively. So, man-days required = $6k \times m = 5k \times n$

$$\text{Or } 6m = 5n \text{ Or } n = (6/5)m \text{ Or } n = 1.2 m$$

Or $n = m + 20\%$ of m

So, the number of men need to be increased by 20%.

8. Answer: (c)

Explanation:

X, Y and Z can complete a piece of work individually in 6 hours, 8 hours and 8 hours respectively. Now, to finish the work in minimum possible time, we need to ensure that X is utilized the most, as he's the most efficient worker. So, we will use X alternatively every second hour. We will also start with him.

So, the sequence of their working will be X, (Y or Z), X, (Y or Z), X,and so on.

X can complete the work in 6 hours. So, in one hour he can complete 16.67% of the work.

Similarly, Y (or Z) can complete the work in 8 hours. So, in one hour he can complete 12.5% of the work.

Now, $X + Y + X + Y + X + Y = 3X + 3Y = 50 + 37.5 = 87.5\%$

Now, 12.5% of the work is left and it's X's turn to do it.

X can do it in $(12.5/16.67)$ hours, i.e. 0.75 hours, or 45 minutes.

So, the entire task can be done by them in the minimum possible time of 6 hours 45 minutes.

9. Answer: (d)

Explanation:

We get a zero when we get 10, which in turn is obtained when 2 and 5 are multiplied. The number of zeroes will depend on whichever is less in number from among 2 and 5.

In the given product $1^2 \times 2^4 \times 3^6 \times 4^8 \times 5^{50}$, we can deduce that 2 is definitely more in number than 5. So, the number of zeroes at the end will be equal to the number of 5's in the given product. The number of 5's in the given expression are:

$$5^{10} \rightarrow 10$$

$$10^{20} \rightarrow 20$$

$$15^{30} \rightarrow 30$$

$$20^{40} \rightarrow 40$$

$$25^{50} \rightarrow 100$$

So, the number of zeroes at the end of the product = $10 + 20 + 30 + 40 + 100 = 200$

10. Answer: (b)

Explanation:

The total savings done by the person by 8th January = $1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 = 64$

Now, $4^3 = 8^2 = 64$

So, 64 is a perfect square, as well as a perfect cube. So, it satisfies the given conditions.

11. Answer: (a)

Explanation:

- **Inference (a) is correct:** The passage emphasizes the importance of a systems approach to urban planning, that factors in social, spatial and cultural aspects. For example, the passage mentions, "The was because these very subjects were absorbed into the planning curriculum that had its roots in the social sciences, geography and architecture." This implies a need for a diverse and interdisciplinary approach in the curriculum for urban planning courses.
- **Inference (b) is incorrect:** The passage does not discuss bureaucracy or the lack of formal training in city administration. Thus, it is beyond the scope of the passage and cannot be a logical or rational inference.
- **Inference (c) is incorrect:** The passage does not mention the management of urban areas as a local affair or problems of insufficient funds. Thus, it is beyond the scope of the passage and can not be a logical or rational inference.

- **Inference (d) is incorrect:** While it may be true, in general, high density and poverty make development planning difficult, this aspect is not specified in the passage. Thus, it is beyond the scope of the passage and can not be a logical or rational inference.

12. **Answer: (a)**

Explanation:

- **Assumption 1 is valid:** The passage implies that there is a need for professionals trained in modern systems approaches to urban planning, understood through the lines "Today if we consider cities such as New York, London and Paris.....The early universities of the West which began to train professionals in planning...these very subjects were absorbed into the planning curriculum" and "*Planning in India, and its education differ from the West.*" This indicates a gap between current Indian planning education and that of western cities, suggesting a need for updated knowledge in the field.
- **Assumption 2 is invalid:** The passage does not state that Indian universities do not have the capacity to impart training in the systems approach, but only that their education differs from the West.

13. **Answer: (b)**

Explanation:

- **Option (a) is incorrect:** The passage's focus is not on the aspect of instant access to information, but rather on the influence of capital in amplifying voices. This is evident from the statement, "When anonymous private entities with high capital can pay for more space for their opinions, they are effectively buying a louder voice."
- **Option (b) is correct:** The passage highlights that social media platforms are driven by profit motives, leading to prioritization of user engagement and inflammatory content. This is reflected in the lines, "The focus of social media is restricted to the promotion of content that generates more user engagement, regardless of how inflammatory the content may be."
- **Option (c) is incorrect:** The passage suggests that social media can jeopardise the quality of political discourse, which contradicts the idea of strengthening democracies. This is indicated in the lines, "If political discourse in the digital sphere is a matter of outshining one's opponent till the election is won, then the quality of politics suffers."
- **Option (d) is incorrect:** The inevitability of social media for well-informed social life is not the focus of the passage. The passage is about the negative impact of social media on political discourse and the prioritization of profit over quality content.

14. **Answer: (c)**

Explanation:

- **Assumption 1 is valid:** The passage implies that the internet is not inclusive enough through the statement, "*When anonymous private entities with high capital can pay for more space for their opinions, they are effectively buying a louder voice.*" This suggests that the internet favours those with more resources, leading to an exclusionary environment.
- **Assumption 2 is valid:** The passage clearly states that the internet can negatively impact the quality of politics. This is evident from the line, "*If political discourse in the digital sphere is a matter of outshining one's opponent till the election is won, then the quality of politics suffers,*" indicating that the internet can adversely affect the quality of politics.

15. **Answer: (b)**

Explanation:

$$222^{333} + 333^{222}$$

$$= [(222)^3]^{111} + [(333)^2]^{111}$$

$$= [(2^3 \times 111^3)]^{111} + [(3^2 \times 111^2)]^{111}$$

$$= [(8 \times 111^3)]^{111} + [(9 \times 111^2)]^{111}$$

$$\begin{aligned}
 &= (111^2)^{111} \times [(8 \times 111)^{111} + (9)^{111}] \\
 &= 111^{222} \times [888^{111} + 9^{111}] \\
 &= 111 \times (111)^{221} \times [888^{111} + 9^{111}]
 \end{aligned}$$

Now, we know that $111 = 37 \times 3$. Also, the expression $111^{222} \times [888^{111} + 9^{111}]$ is definitely odd. Therefore, we can say that the given expression is divisible by 37 and 3, but not 2

Alternate method:

Here, we have 2 numbers out of which 333^{222} is odd, while 222^{333} is even.

Now, we know that the sum of an odd and an even number is always an odd number. Therefore, the given expression is not divisible by 2.

Only option (b) fits the bill.

16. Answer: (a)

Explanation:

Here, gain is $20\% = (1/5)$

Let the cost price (CP) of honey be Rs. 1 per gram. So, CP of 100 grams honey will be Rs. 100

After a gain of 20%, the selling price (SP) will be Rs. 120

It means 120 grams of mixture is sold.

So, amount of water mixed = $120 - 100 = 20$ grams

So, the required percent of water = $(20/100) \times 100 = 20\%$

17. Answer: (d)

Explanation:

$$\begin{aligned}
 (30)^{30} &= (10 \times 3)^{30} \\
 &= 3^{30} \times 10^{30}
 \end{aligned}$$

Since, 10^{30} will result in a 31-digit number with 30 zeros at the end. So, the rightmost digit preceding the zeros will be the unit digit of 3^{30} .

$$\text{Now, } 3^{30} = 3^{(28+2)} = 3^{(4 \times 7 + 2)}$$

We know that $3^1 = 3$; $3^2 = 9$; $3^3 = 27$, i.e. unit digit 7; $3^4 = 81$, i.e. unit digit 1; $3^5 = 3$; and so on. So, we can say that after every 4th power the unit digit will repeat, i.e. 3 has a cyclicity of 4.

So, the unit digit of $3^{(4 \times 7 + 2)}$ [which is of the form $3^{(4n+2)}$] must be 9. Hence, the rightmost digit preceding the zeros will be 9.

18. Answer: (c)

Explanation:

Here, the numbers are 421 and 427

When we subtract 421 and 427 by 1, we get 420 and 426.

Now by taking the prime factors we get:

$$420 \rightarrow 2 \times 2 \times 3 \times 5 \times 7 \times 1$$

$$426 \rightarrow 2 \times 3 \times 71 \times 1$$

The common factors among them are 2, 3, and 6 (multiple of 2 and 3). Hence, we can say that 3 numbers can be used as the divisor.

19. Answer: (b)*Explanation:*

Quantity of petrol contained in X = 399 litre Quantity of diesel contained in Y = 532 litres By taking the factors of 399 and 532 we get:

$$399 = 1 \times 3 \times 7 \times 19$$

$$532 = 1 \times 2 \times 2 \times 7 \times 19$$

So, the possible bottle sizes are 1 litre, 7 litres, 19 litres and 133 litres. Therefore, the number of possible bottle sizes is 4.

20. Answer: (c)*Explanation:*

x, y and z are distinct prime numbers less than 10. So, these numbers can be 2, 3, 5, or 7.

$$S = x + y + z$$

$$S = 2 + 3 + 5 = 10 \dots\dots\dots (1)$$

$$S = 3 + 5 + 7 = 15 \dots\dots\dots (3)$$

So, (2,3,5) and (3,5,7) satisfy conditions 1 and 3 respectively. However, statement 2 is not true for these given set of numbers.

21. Answer: (d)*Explanation:*

- **Assumption 1 is invalid:** The passage does not explicitly discuss the relative roles of parents and the government in school education. It focuses on the educational challenges and expectations faced by children and their families only, as evident in the line "For many families, these children are the first from their families ever to get this far in school. Parents and children expect that such 'graduates' from school will go on to high school and college. Hardly anyone wants to go back to agriculture". There is no clear indication that parents' roles are greater than those of the government in addressing these issues. Hence, this assumption is incorrect.
- **Assumption 2 is invalid:** The passage strictly discusses the lags in basic academic competencies, but does not spell out any reason for the same. Further, it cannot be assumed that a uniform curriculum across the country would address the issue. Therefore, this assumption would go beyond the scope of the passage.

22. Answer: (c)*Explanation:*

- **Option (a) is incorrect:** The passage nowhere mentions the reason for the fallout of academic competencies. The option however introduces a reason (poverty) for such a fallout, which is beyond the scope of the passage.
- **Option (b) is incorrect:** The passage does not discuss any reason behind the learning gaps of children, hence we cannot infer or assume that monetary incentives would be a solution or strategy to address the academic underperformance of children. The passage highlights the gap between expected competencies and actual ability, without suggesting financial incentives as a remedy. Therefore, this option is beyond the scope of the passage.
- **Option (c) is correct:** The passage clearly states that "abilities in terms of academic competencies are far lower than they should be even based on curricular expectations of class 8" and that "Parents and children expect that such 'graduates' from school will go on to high school and college." This disconnect between expectations and actual academic abilities suggests a need for policies that bridge this gap, aligning competencies with expectations, which is precisely what option (c) suggests.
- **Option (d) is incorrect:** The option suggests going back to agriculture as desirable if India wishes to reap the benefits of the demographic dividend (high number of youths/ working population, in comparison to dependent population).

- This option goes against the message conveyed in the passage, which is that "Hardly anyone wants to go back to agriculture". The author further links this to the learning gaps, that going back to agriculture might become necessary on account of learning gaps, which would hinder us from achieving the demographic dividend. The following lines bring this meaning out "Parents and children expect that such 'graduates' from school will go on to high school and college. **Hardly anyone wants to go back to agriculture. On the other hand, abilities in terms of academic competencies are far lower than they should be** even based on curricular expectations of class 8."

23. Answer: (d)

Explanation:

- **Option (a) is incorrect:** This statement emphasizes the importance of scientists' commitment but doesn't directly address the author's focus on the social responsibilities of science. It's more about the personal dedication of scientists rather than the broader social role of science itself.
- **Option (b) is incorrect:** This statement highlights science as a societal product and discusses promoting scientific awareness. While it may slightly touch upon the social role of science, it does not specifically address the social responsibilities or consequences that the author discusses about the Industrial Revolution and modern views on science.
- **Option (c) is incorrect:** This statement is factual in that scientific advancements did play a role in enabling the Industrial Revolution. However, the passage does not focus on this causal relationship, but rather on how the concept of science's social responsibility emerged around the time of the Industrial Revolution. Therefore, this statement, while true, is not directly relevant to the specific point the author is making.
- **Option (d) is correct:** This statement most accurately reflects the author's view as outlined in the passage. It captures the dual aspect of science that the author describes: pursuing truth, as in the times of Newton and Galileo, and also being responsible for social welfare, a modern perspective that emerged around the time of the Industrial Revolution.

24. Answer: (c)

Explanation:

Given sequence: A_BCD_BB CDABC_DABC_D The required sequence is:

A ABCD / ABB CD / ABC C D / ABC D D

Hence, the missing letters are – A, A, C, D

25. Answer: (a)

Explanation:

Let Q invested Rs. X for 10 months and P invested Rs. (X + 14000) for 8 months. Now, in the profit of Rs.2000, P's share is Rs. 1200 and Q's share is Rs. 800.

We know that, the profit is divided in the ratio of contribution. So, $\{8 \times (X + 14000)\} / (10X) = 1200/800$

Or $8X + 112000 = 15X$ Or $7X = 112000$

Or $X = \text{Rs. } 16000$

Hence, money invested by Q = Rs. 16000

So, money invested or contributed by P = Rs. 16000 + Rs. 14000 = Rs. 30000

26. Answer: (b)

Explanation:

Let the salary of R be Rs. 100

Then salary of Q = 80% of Rs. 100 = Rs. 80 And salary of P = 80% of Rs. 80 = Rs. 64

Required percentage = $\{(100 - 64)/64\} \times 100 = (36/64) \times 100 = 56.25 \%$

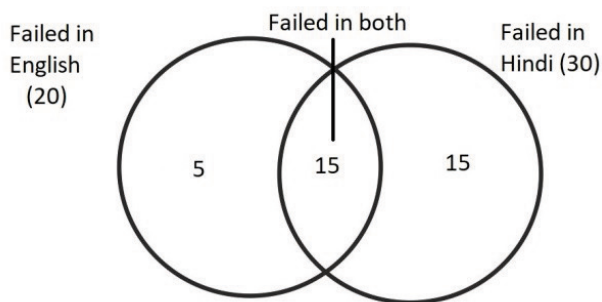
27. Answer: (d)*Explanation:*

Let the number be 100.

After multiplying the number by 4, the number will be $4 \times 100 = 400$ But by mistake it was divided by 4. The resultant number will be $100/4 = 25$ Required percentage change
 $= \{(400 - 25)/400\} \times 100 = (375/400) \times 100 = 93.75\%$ **28. Answer: (b)***Explanation:*

80% of students passed in English means 20% of students failed in English. 70% of students passed in Hindi means 30% of students failed in Hindi.

We can solve this question by using Venn diagram method:

Students that failed in only one subject = Students that failed in only English or those that failed in only Hindi = $5 + 15 = 20\%$ **29. Answer: (a)***Explanation:*

Let the age of father be X and the age of son be Y. According to the question,

$$(X - n) = Y$$

Or $X - Y = n \dots \dots \dots (i)$

And $X = 4(Y - n)$ Or $X = 4Y - 4n$

Or $(4Y - X)/4 = n \dots \dots \dots (ii)$

From equations (i) and (ii), we get: $X - Y = (4Y - X)/4$

Or $4X - 4Y = 4Y - X$ Or $5X = 8Y$

Or $X/Y = 8/5$

Or we can say that, $X = 8k$ and $Y = 5k$

Given that, $X + Y = 130$ Or $8k + 5k = 130$

Or $13k = 130$

Or $k = 10$

Hence, age of father (X) = $8k = 80$ years And age of son (Y) = $5k = 50$ years Difference in their ages = $80 - 50 = 30$ years**30. Answer: (d)***Explanation:*

We know that:

1. 1000 litres = 1 m^3

2. 1 metric ton = 1000 kg

3. 1 hectare = 10000 m^2

So, all of the given statements are correct.

31. Answer: (d)*Explanation:*

- **Statement 1 is incorrect:** The passage does not explicitly state that mankind's existence is solely attributed towards science. Though it emphasizes the strong link between science and human history, it does not suggest that humanity's survival hinges on scientific advancements. Hence it is incorrect.
- **Statement 2 is incorrect:** While the passage does discuss the significant impact of science on human history and civilization, it does not claim that science will determine mankind's destiny. It raises a question about the allegations against the role of science in societal conflicts, indicating that the relationship between science and mankind's destiny is complex and possibly influenced by other factors. Hence, this statement is also incorrect.

32. Answer: (b)*Explanation:*

- **Assumption 1 is invalid:** The passage questions whether the international conflicts and horrors of modern life are the inevitable results of scientific progress in the lines, "Is this the inevitable result of the progress of science or does the fault lie elsewhere?". Here the author contradicts the assertion that the horrors of modern life are the inevitable result of the progress of science, suggesting that the real cause lies elsewhere (for example, the direction in which science has progressed). The author is thus questioning rather than affirming the inevitability.
- **Assumption 2 is valid:** The passage reflects on how science and mankind cannot be divorced at convenience and points out that treating science as an abstract entity separate from human agency is misleading. This supports the assumption that the overlooked truth is that science is indeed shaped by human actions and decisions. It aligns well with the passage's theme of emphasizing the interconnectedness of science and human agency.

33. Answer: (c)*Explanation:*

- **Option (a) is incorrect:** The passage does not directly discuss the contrast between imagination and understanding. It focuses more on the realisation of what values are universal versus what are localized, understood better through travel and interaction. Therefore, this option does not directly relate to the distinction made in the passage.
- **Option (b) is incorrect:** Although the passage mentions encountering various cultures ("on many a beach where his language is not spoken"), it does not focus on differentiating between communities and nationalities. Instead, the passage is about understanding the essence of common values, irrespective of geographical or cultural boundaries.
- **Option (c) is correct:** This option directly aligns with the passage's theme:
- **Universal values:** "Such delicate goods as justice, love and honour, courtesy, and indeed all the things we care for, are valid everywhere
- **Local values:** "but they are variously moulded and often differently handled, and sometimes nearly unrecognizable if you meet them in a foreign land.
- The passage further mentions, "the art of learning fundamental common values is perhaps the greatest gain of travel to those who wish to live at ease among their fellows."
- Therefore, recognising the values that are specific to certain areas and those that are globally relevant, the merchant learns "what is parochial and what is universal in his choice".
- Overall, the passage suggests that travel helps in understanding the universal applicability of certain values despite their local variations, which is precisely what this option states.
- **Option (d) is incorrect:** There is no mention or implication in the passage about differentiating between friends and foes through travel. The focus is on the values and how they are perceived differently across cultures, not on personal relationships or conflicts.

34. Answer: (a)*Explanation:*

- **Assumption 1 is valid:** The passage mentions that through travel, a merchant learns the worth of

what he carries, including values like justice, love, and honour. These are related to understanding human values and behaviours across different cultures. Thus, this assumption aligns well with the idea that travel enhances understanding of human values and differences.

- **Assumption 2 is valid:** The passage explicitly states that "the art of learning fundamental common values is perhaps the greatest gain of travel to those who wish to live at ease among their fellows." This directly supports the assumption that travel aids in learning universal values.
- **Assumption 3 is invalid:** This assumption is invalid. While the passage suggests that a well-traveled person becomes knowledgeable about different values and how they are expressed around the world, it does not directly state that this knowledge equips a person to resolve differences among people. It implies a deep understanding but not necessarily the ability to mediate or resolve conflicts

35. Answer: (d)

Explanation:

Let $X = 10a + b$ and $Y = 10b + a$ (interchanging the digits of X) Greatest two-digit number = 99

| a | b |
|---|---|
| 1 | 8 |
| 2 | 7 |
| 3 | 6 |
| 4 | 5 |
| 5 | 4 |
| 6 | 3 |
| 7 | 2 |
| 8 | 1 |

36. Answer: (b)

Explanation:

Average weight of women = 63 kg.

So, Total weight of 4 women = $63 \times 4 = 252$ kg.

It is given that weight of 6 boys = weight of 4 women So, Total weight of 6 boys = 252 kg.

So, Average weight of a boy = $252/6 = 42$ kg.

Alternate method:

LCM of 6 boys, 7 girls, 3 men and 4 women, i.e. 6, 7, 3 and 4 = 84

So, let Weight of 6 boys = Weight of 7 girls = Weight of 3 men = Weight of 4 women = 84 kg

So, the Ratio of the Average weights of Boys : Girls : Men : Women = $84/6 : 84/7 : 84/3 : 84/4$
 = 14 : 12 : 28 : 21

= 42 : 36 : 84 : 63

So, the average age of boys = 42 kg.

37. Answer: (a)

Explanation:

Time frame: 10 a.m. to 2:00 p.m. Hour and minute hands coincide:

1 time between 10 a.m. and 11:00 a.m.

1 time between 11 a.m. and 1:00 p.m.

1 time between 1 p.m. and 2:00 p.m.

So, hour and minute hands coincide 3 times between 10:00 a.m. and 2.00 p.m.

38. Answer: (c)

Explanation:

Here, we will be calculating the number of odd days from 2025 till the number of odd days become 7, i.e. 0.

| Year | Odd days |
|---------------------|----------|
| 2025 | 1 |
| 2026 | 1 |
| 2027 | 1 |
| 2028 (Leap year) | 2 |
| 2029 | 1 |
| 2030 | 1 |
| Total days | 7 |

So, year 2031 will have the same calendar as that of 2025.

Alternate method:

The calendar of a non-leap year repeats after 6 or 11 years. If we observe the options, only 2031 seems suitable.

39. Answer: (d)

Explanation:

p and q are odd numbers.

Similarly, r and s are even numbers.

Statement 1:

$(p - r)^2(qs)$ is even, as s is an even number. This statement is correct.

Statement 2:

$(q - s)q^2s$ is even, as s is an even number. This statement is correct.

Statement 3:

$(q + r)^2(p + s)$ is odd, as both $(q + r)$ and $(p + s)$ are odd. This statement is correct.

40. Answer: (c)

Explanation:

Time = 4 : 25

Minute hand moves 6° per minute.

So, Angle traced by minutes hand in 25 minutes = $25 \times 6^\circ = 150^\circ$

The hour hand moves half a degree in one minute.

So, angle traced by hour hand at 4 hours and 25 minutes, i.e. 265 minutes = $265 \times 0.5^\circ = 132.5^\circ$

Thus, the angle between two hands at 4 : 25 = $150^\circ - 132.5^\circ = 17.5^\circ$

41. Answer: (c)*Explanation:*

- **Inference 1 is correct:** The passage revolves around the issue of a one-size-fits-all approach in the form of fixed class durations and the same set of lectures for all. We can infer this from the lines, "Conventional classrooms, by emphasizing fixed duration over learning effectiveness" and "every learner is subjected to the same set of lectures in the same way for the same duration. In the end, a few learners shine, some survive, and the rest are left behind. After the fixed duration, the classroom model moves on, with not a thought spared for those left behind. This is how we end up with 10 percent employability in our graduates after a decade and half of formal education."
- **Inference 2 is correct:** The passage mentions, "Conventional classrooms....The tyranny of the classroom is that every learner is subjected to the same set of lectures in the same way for the same duration". Though an extreme phrase is used in "stamp out all differentiation", the spirit of the inference can be understood to be correct in the context of the passage.

42. Answer: (d)*Explanation:*

- **Inference 1 is incorrect:** Consider the lines of the passage, "Conventional classrooms, by emphasizing fixed duration over learning effectiveness, resign themselves to variable outcomes. The tyranny of the classroom is that every learner is subjected to the same set of...the classroom model moves on, with not a thought spared for those left behind. This is how we end up with 10 per cent employability in our graduates after a decade and a half of formal education."
- The author therefore criticizes the conventional classroom system for emphasizing fixed duration over learning effectiveness and highlights the poor employability outcome of graduates. It suggests that the current system leaves many students behind. Therefore, the author advocates a need for change in the education system, which will promote employability, rather than being comfortable with large unorganised sector employment.
- **Inference 2 is incorrect:** The passage suggests the opposite of this inference, explaining the issues with the conventional education systems and linking them to poor employability or lack of realisation of our demographic dividend. In this respect, consider the lines, "This is how we end up with 10 per cent employability in our graduates after a decade and a half of formal education. Repeating the same ineffectual script in the realm of skill education will not produce different results"

43. Answer: (a)*Explanation:*

- **Assumption 1 is valid:** The passage mentions that parents' "parental solicitude" often disguises a "love of power" and that their opinions are "so dogmatic that the young seldom confide in them." This suggests that parents are perceived as dominating and assertive, making adolescents uncomfortable.
- **Assumption 2 is not valid:** The author does discuss the behaviour and dynamics between adolescents and parents, highlighting secrecy and lack of confiding of adolescents in their parents due to the latter's dogmatic behaviour. However, there is not enough evidence in the passage to suggest a lack of respect in the adolescents for their parents.

44. Answer: (a)*Explanation:*

- **Option (a) is correct:** This statement best reflects the central idea of the passage that parents' attempts to control and guide adolescents can be counterproductive, as it leads to conflict and secrecy. Consider the lines of the passage, "When a child reaches adolescence, there is apt to be a conflict between the parents and the child", "young seldom confide in them, and usually go their own way in secret." This indicates the lack of power of parents to control young adolescents. This option fits in as the best answer.
- **Option (b) is incorrect:** The statement is too absolute. The passage critiques the nature of parental involvement but does not mention or indicate all parental involvement to be unnecessary.

- **Option (c) is incorrect:** This statement is extreme and not supported by the passage. The passage is quite general and makes no mention or specification of modern nuclear or any particular type of family structure where this pattern is observed.
- **Option (d) is incorrect:** The passage nowhere mentions adolescents to be stubborn, disobedient and careless. It only suggests that adolescents consider themselves to be capable of managing their affairs. In fact, the passage suggests parents disguise power under the claim of love and calls them to be dogmatic, instead of blaming the adolescents.
- The passage describes the behaviour of secrecy as a reaction to their parents' attitudes, rather than inherently labelling them as stubborn, disobedient, and careless.

45. Answer: (b)

Explanation:

From 1 to 100, 5 comes 20 times.

Similarly, from 101 to 200, 5 comes 20 times.

Similarly, from 201 to 300, 5 comes 20 times.

So, we just need to check the numbers after 260. Such numbers having 5 are 265, 275, 285, 295 i.e. 4 numbers.

So, the number of 5's used from 1 to 260 = $(20 + 20 + 20) - 4 = 56$

46. Answer: (b)

Explanation:

Series with 28 terms: $1 + 1 + 2, 1 + 3, 2, 1 + 4, 3, 2, 1 + 5, 4, 3, 2, 1 + 6, 5, 4, 3, 2, 1 + 7, 6, 5, 4, 3, 2$

Their sum = 84

47. Answer: (d)

Explanation:

Let $Q = 100$, then $R = 120\%$ of $100 = 120$ & $P = 125\%$ of $120 = 150$ So, $P:Q:R = 15:10:12$

Now, $15 + 10 + 12 = 37$ units = Rs. 3330

Or 1 unit = Rs. 90

So, $P = 15$ units = $15 \times 90 = \text{Rs. } 1350$

48. Answer: (a)

Explanation:

Case 1: There's no carry over from B+D

$A + C = 1C$

Or $A + C = 10 + C$

Or $A = 10$ (not possible)

Case 2: There's carry over 1 from B+D

$A + C + 1 = 1C$

Or $A + C + 1 = 10 + C$ Or $A = 9$

49. Answer: (d)

Explanation:

4 triplets satisfying the given conditions are: $(5, 2, 1), (6, 2, 1), (7, 2, 1)$ and $(7, 3, 1)$

50. Answer: (c)

Let the costs of oranges, mangoes and apples be Q, M and A . $4Q + 6M + 8A = 2(Q + 2M + 5A)$

Or $4Q + 6M + 8A = 2Q + 4M + 10A$ Or $2Q + 2M = 2A$

Or $Q + M = A$

Statement 1:

$$3Q + 5M + 9A = 4Q + 6M + 8A \text{ Or } A = Q + M$$

It is true.

Statement 2:

$$Q + M = A$$

It is true.

Hence, both statements 1 & 2 are true.

51. Answer: (b)

Explanation:

- The passage describes how an international team injected a mixture of carbon dioxide and water into underground basalt rocks. The resulting chemical reaction dissolved the rocks' calcium and magnesium, forming limestone.
- **Option (a) is not correct:** This option is not supported by the passage. The passage focuses on the chemical process and the transformation of carbon dioxide into stone. It nowhere mentions the cost factor or feasibility of carrying out the process at a commercial scale.
- **Option (b) correct:** This option is the best answer as it is supported by the passage. The process described involves converting carbon dioxide into limestone, which implies a method for carbon sequestration (which is the capturing and storing of atmospheric carbon dioxide). The scientists noted that carbon dioxide was effectively converted into stone.
- **Option (c) is not correct:** The passage mentions that the acidic mixture of carbon dioxide and water dissolved basaltic rocks' calcium and magnesium, and thereafter goes on to mention the formation of limestone, rather than the extraction of these minerals from such rocks. Therefore, the focus of the passage is on limestone formation rather than the extraction of calcium and magnesium from such rocks.
- **Option (d) is not correct:** This option is not supported by the passage. There is a lack of concrete or suggestive evidence to conclude that "good" rock-dissolving acid can be produced in terms of quality or quantity.
- Further, the focus of the passage is on the result (limestone formation).

52. Answer: (a*)

Explanation:

- **Assumption 1 is valid:** The passage states that the melting water from giant icebergs contains nutrients that support high levels of phytoplankton growth. It is common knowledge that phytoplankton are found in ocean and form a crucial part of the ocean's primary productivity as they are consumed by fish, thus forming the base of the marine food chain. Therefore, it is safe to extend our understanding of the lines of the passage to the impact on primary productivity and food chains of the Southern Ocean. Furthermore, the option statement uses accommodative words such as 'bearing', which forms the base for a valid assumption.
- ***However, there is a possibility that this assumption be taken as invalid:** The passage primarily focuses on the impact of giant icebergs on phytoplankton productivity and carbon storage, **without explicitly** connecting these effects to the broader food chain. While it is logical to infer that phytoplankton growth influences the food chain, the passage does not explicitly make this connection.
- **Assumption 2 is not valid:** While the passage mentions that giant icebergs store carbon and support phytoplankton growth, it does not explicitly discuss the broader climate change effects or the impact on world fisheries. Although it is plausible that changes in primary productivity in the Southern Ocean could have wider implications, this is not properly covered in the passage (to consider this assumption to be valid). Furthermore, the passage mentions the Southern Ocean, whereas the option mentions and extends the assumption to world fisheries. The connection between the two is again not established in the passage.

53. Answer: (c)

Explanation:

- The main theme of this passage lies in the (first and) last line of the passage “caterpillars’ unique ability can induce the plant to turn off its defence against insect predators.... The find could throw new light on compounds associated with plant response to pathogens like fungi or bacteria.”
- Please note, in this question, all the options pertain to an inference from the central idea, rather than the central idea in itself.
- **Option (a) is not correct:** This option is not supported by the passage. The passage discusses the caterpillars feeding on corn, not weeds, and does not suggest using them for weed control.
- **Option (b) is not correct:** The passage mentions, “unique ability..can induce the plant to turn off its defence against insect predators”, “plant response to pathogens”. Therefore, the focus is on compounds that are specific to plants. This is best reflected in Option (c), rather than (b).
- **Option (c) is correct:** This option aligns well with the passage. The ability of caterpillars to turn off plant defences using their frass suggests the potential for developing new types of pesticides that could be organic and ecologically sustainable. This is a logical and practical application of the finding.
- **Option (d) is not correct:** This is a far-fetched option. The passage does not discuss genetic modification.

54. Answer: (c)

Explanation:

$$\begin{aligned}
 32^5 + 2^{27} &= (2^5)^5 + 2^{27} \quad (\because (a^m)^n = a^{mn}) \\
 &= 2^{25} + 2^{27} \\
 &= 2^{25}(1 + 2^2) \\
 &= 2^{25} \times 5 \\
 &= 2^{24+1} \times 5 \\
 &= 2^{24} \times 2^1 \times 5 \quad (\because a^{m+n} = a^m \times a^n) \\
 &= 2^{24} \times 10
 \end{aligned}$$

Thus, $32^5 + 2^{27}$ is completely divisible by 10.

55. Answer: (c)

Explanation:

it is given that p and q are positive integers, such that $p < q$. $p + q = k$

Case 1: If $k = 3$

$$p + q = 3 \quad 1 + 2 = 3$$

Here, p and q have unique values. Hence, this is discarded.

Case 2: If $k = 4$

$$p + q = 4 \quad 1 + 3 = 4$$

Here, p and q have unique values. Hence, this is discarded.

Case 3: If $k = 5$

$$p + q = 5$$

$$1 + 4 = 5$$

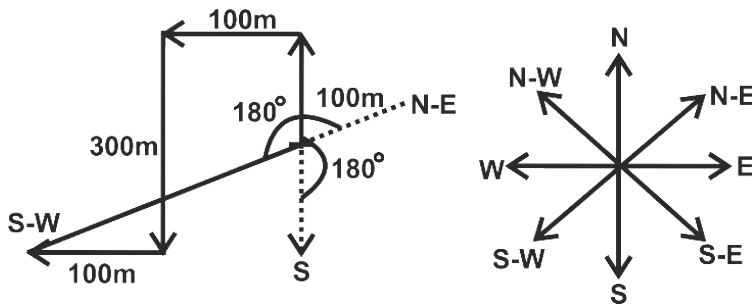
$$2 + 3 = 5$$

Thus, here p can be 1 or 2 and q can be 4 or 3. So, here p and q have multiple possible values.

56. Answer: (c)

Explanation:

Suppose the person was walking initially in the north direction. Then according to the information provided in the question, we can draw the following diagram tracing the path taken by him.

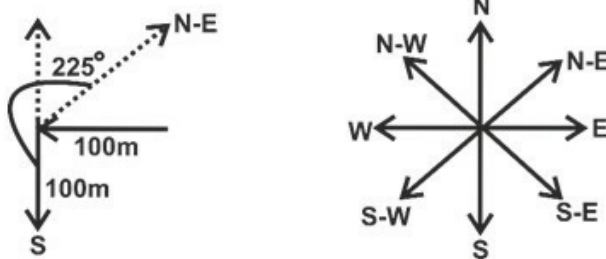


According to the question, his office should be in N-E direction from his house. But it is in S-W direction in our diagram. This means that we need to rotate our diagram by 180° either in clockwise or in anti-clockwise direction. This implies that the North direction in our diagram will end up becoming the South direction.

57. Answer: (d)

Explanation:

As per the information provided in the question, we can draw the following diagram.



Thus, his final direction will be the North-East.

58. Answer: (d)

Explanation:

Here, the statement says that India is the world's largest producer of milk. However, we don't know anything about the consumption/demand of milk in India.

If domestic demand $>$ production, it would mean that India will have to import milk.

Even if domestic demand $<$ production, and India gets to export the surplus milk, we cannot say that it would definitely be the largest exporter. That's because how much milk India gets to export will depend on the difference between the milk production and milk consumption in India.

Thus, none of the conclusions is correct.

59. Answer: (c)

Explanation:

We have to find the unique values of m and n , wherein m and n are natural numbers.

Using statement-I alone:

$m + n > mn$ and $m > n$ Possible cases are:

$$2 + 1 = 3 > 2 \times 1$$

$$3 + 1 = 4 > 3 \times 1$$

$$4 + 1 = 5 > 4 \times 1$$

$$5 + 1 = 6 > 5 \times 1$$

....and so on.

It gives multiple values of m and n . However, the solution must be unique. Hence, this statement alone is not sufficient to answer the question.

Using statement-II alone:

$$mn = 24$$

Possible cases are:

$$1 \times 24 = 24$$

$$2 \times 12 = 24$$

$$3 \times 8 = 24$$

$$4 \times 6 = 24$$

It also gives multiple values of m and n . Hence, this statement alone is not sufficient to answer the question.

On combining statement-I and statement-II:

$$24 + 1 = 25 > 24$$

So, we get unique values of m and n . We need both the statements together to answer the question.

60. Answer: (c)

Explanation:

We cannot solve this question using either statement alone.

On combining both the statements, we can solve the question. $\text{Time} = \text{Distance} / \text{Speed}$

$$= 12000/2.4 \quad (\text{as } 1 \text{ megabyte} = 1000 \text{ kilobytes})$$

$$= 5000 \text{ seconds.}$$

61. Answer: (a)

- **Option (a) is correct:** The passage throughout discusses the importance of a responsible and transparent media. As per the passage "*A normatively responsible media through its communication effect has the responsibility to circulate the content of reality without distortion.*" Therefore, this option captures the essence of the passage well.
- **Option (b) is incorrect:** This statement contradicts the passage, which emphasizes the need for responsible media to avoid distortion, implying that fake news is not desirable or inherent in an ideal democracy. Further, there is no mention of fake news per se, so it goes beyond the scope of the passage as well.
- **Option (c) is incorrect:** While the passage does discuss freedom of expression, its focus is more on the accuracy and responsibility of the media in conveying reality, rather than on the absence of restrictions.
- **Option (d) is incorrect:** The statement goes against the arguments made in the passage. Consider the lines, "*In a robust democracy....A normatively responsible media through its communication effect has the responsibility to circulate the content of reality without distortion.*" Therefore, contrary to what is suggested in this option, the passage makes a clear case for responsible media in an ideal democracy, from which we can infer that this is not an impossible scenario.

62. Answer: (d)

Explanation:

- **Option (a) is incorrect:** This statement does not directly address the main concerns of the passage, which are about data collection and privacy, rather than capital expenditure in manufacturing.
- **Option (b) is incorrect:** While it is true that knowledge of consumer behaviour stimulates the growth of commerce, the passage does not connect this to economic development or make any mention of it. Therefore, it is beyond the scope of the passage.
- **Option (c) is incorrect:** Although interconnected devices might provide comfort, this statement overlooks the passage's emphasis on privacy risks and data misuse.
- **Option (d) is correct:** Amongst the given options, this statement best addresses the most logical, rational and practical message implied by the passage, i.e. the privacy and security risks associated with interconnected home devices.

63. Answer: (c)

- **Option (a) is incorrect:** This statement is not supported by the passage. The passage suggests that environmental sustainability and economic growth should be pursued together through green growth strategies, and not that they are opposed to each other.
- **Option (b) is incorrect:** The passage, on the contrary, suggests that sustainable development strategies will help avoid an economic dead end and ensure inclusive growth.
- **Option (c) is correct:** As per the passage “Resource-intensive and, in particular, energy-intensive processes will need to make way for more efficient and resource frugal development strategies **if we are to avoid an economic dead end or a world in which only a small elite is able to enjoy affluence in the midst of a sea of poverty.**” This option therefore aligns well with the theme of the passage, which emphasizes the need for environmentally sustainable growth strategies to achieve inclusive growth and avoid economic and social disparities.
- **Option (d) is incorrect:** This statement is more pessimistic than the passage. The passage advocates for rethinking growth strategies to achieve environmental sustainability and inclusiveness. We cannot infer from any line that degradation and inequality are inevitable. For instance, “Resource intensive and, in particular energy intensive processes will need to make way for more efficient and resource frugal development strategies **if we are to avoid** an economic dead end or a world in which only a small elite is able to enjoy affluence in the midst of a sea of poverty.” It therefore suggests that extreme environmental and economic outcomes are avoidable.

64. Answer: (c)

Given that, x and y are distinct natural numbers.

Using statement-I alone:

$$x/y = \text{odd } 3/1 = 3$$

$$6/2 = 3 \dots\dots\text{and so on.}$$

This statement alone is not sufficient, as so many possibilities are there.

Using statement-II alone:

$$xy = 12$$

The values of x and y may be 12 & 1, 4 & 3, or 6 & 2. So, this statement alone is also not sufficient.

On combining statement-I and statement-II:

$$12/1 = 12, \text{ which is not odd. } 4/3 \text{ is a fraction.}$$

$$\text{Now, } 6/2 = 3, \text{ which is an odd number.}$$

Hence, unique values of x and y are 6 and 2 respectively.

Hence, the question can be answered by using both the statements together, but cannot be answered using either statement alone.

65. Answer: (c)

Given that, a certain amount has been distributed among X, Y and Z.

Using statement-I alone:

$$X = (4/5) (Y + Z)$$

$$\text{Or } 5X = 4Y + 4Z \dots\dots\dots(i)$$

Using statement-II alone:

$$Y = (2/7) (X + Z)$$

$$\text{Or } 7Y = 2X + 2Z \dots\dots\dots(ii)$$

$$\text{Or } 14Y = 4X + 4Z \dots\dots\dots(ii)$$

On combining statement-I and statement-II:

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

$$9X = 18Y$$

$$\text{Or } X = 2Y \dots\dots\dots (iv)$$

$$\text{So, } X > Y$$

Putting the value of X in equation (ii), we get:

$$7Y = 4Y + 2Z \text{ Or } 3Y = 2Z$$

$$\text{Or } Z = 1.5 Y \dots\dots\dots (v)$$

$$\text{So, } Z > Y$$

From equations (iv) and (v), we can say that value of Y is the least. Hence, Y received the least amount.

Hence, the question can be answered by using both the statements together, but cannot be answered using either statement alone.

Alternate method:

Using statement-I alone:

$$X = (4/5) (Y + Z) \text{ Or } X / (Y + Z) = 4/5$$

$$\text{Or } X = 4k \text{ and } (Y + Z) = 5k \dots\dots\dots (i)$$

Using statement-II alone:

$$Y = (2/7) (X + Z) \text{ Or } Y / (X + Z) = 2/7$$

$$\text{Or } Y = 2k \text{ and } (X + Z) = 7k \dots\dots\dots (ii)$$

On combining statement-I and statement-II:

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

$$Y + Z = 5k$$

$$\text{Or } 2k + Z = 5K \text{ Or } Z = 3K$$

$$\text{So, we get } X = 4k, Y = 2k \text{ and } Z = 3k \text{ Or } X : Y : Z = 4 : 2 : 3$$

By seeing this ratio, we can say that Y received the least amount.

Hence, the question can be answered by using both the statements together, but cannot be answered using either statement alone.

66. Answer: (d)

Explanation:

Given that the average marks in a class are 60.

Using statement-I alone:

The highest marks in the class are 70 and lowest marks are 50.

This statement is not sufficient, as the strength of the class can be anything.

Using statement-II alone:

Exclusion of highest and lowest marks from the class doesn't change the average.

This statement is also not sufficient, as we don't get any information regarding the strength of the class.

This question cannot be answered even by using both the statement together.

67. Answer: (a)

Explanation:

Given that there are three distinct prime numbers whose sum is a prime number.

Using statement-I alone:

Their sum is less than 23.

Only one triplet of prime numbers satisfies this condition: (3, 5, 11). ($3 + 5 + 11 = 19 < 23$) Hence, statement I alone is sufficient to answer the question.

Using statement-II alone:

One of the numbers is 5.

$5 + 7 + 11 = 23$ (a prime number)

$5 + 11 + 13 = 29$ (a prime number)

Using this statement alone, we cannot obtain a unique set of prime numbers.

Hence, the question can be answered by using one of the statements alone, but cannot be answered using the other statement alone.

68. Answer: (d)

Explanation:

Using statement-I alone: $2x + y$ is an integer. If $x = 1.5$ and $y = 2$, then:

$2x + y = 3 + 2 = 5$, which is an integer.

But, $x + y = 1.5 + 2 = 3.5$, which is not an integer.

If $x = 1$ and $y = 2$, then:

$2x + y = 2 + 2 = 4$, which is an integer. Also, $x + y = 1 + 2 = 3$, which is an integer.

So, with the help of statement –I alone, we cannot say that $x+y$ is an integer or not.

Using statement-II alone: $x + 2y$ is an integer. If $y = 1.5$ and $x = 2$, then:

$x + 2y = 2 + 3 = 5$, which is an integer.

But, $x + y = 2 + 1.5 = 3.5$, which is not an integer. If $x = 1$ and $y = 2$, then:

$x + 2y = 1 + 4 = 5$, which is an integer. Also, $x + y = 1 + 2 = 3$, which is an integer.

So, with the help of statement –II alone, we cannot say that $x+y$ is an integer or not.

On combining statement-I and statement-II:

$2x + y$ is an integer. Also, $x + 2y$ is an integer.

But even if it's true, $x+y$ may be an integer or not. Let's illustrate with an example. If $x = 1.33$ and $y = 2.33$, then:

$x + 2y = 1.33 + 4.67 = 6$, which is an integer. $2x + y = 2.66 + 2.33 = 5$, which is an integer.

But, $x + y = 1.33 + 2.33 = 3.66$, which is not an integer.

So, even after combining both of the statements, we cannot say that $x+y$ is an integer or not.

69. Answer: (c)

Explanation:

$p + r + q = \text{Rs. } 50$, wherein $q = \text{Rs. } 16$ So, $p + r = 50 - 16$

Or $p + r = 34$ (i)

Also, it is given that the price of q is the least.

Using statement-I alone:

$p \leq r$

It alone is not sufficient.

Using statement-II alone:

$r \leq p$

It alone is not sufficient.

On combining statement-I and statement-II:

We can say that $p = r$.

Therefore, from equation (i), we get:

$$p + r = 34$$

$$\text{Or } p = r = 17$$

Therefore, the price of the article $p = \text{Rs. } 17$

Hence, the question can be answered by using both the statements together, but cannot be answered using either statement alone.

70. Answer: (d)

Explanation:

Using statement-I alone:

$$P + Q = R + S \quad \dots\dots(i)$$

So, from statement –I alone we cannot say that P scored more than Q or not.

Using statement-II alone:

$$(P + S) > (Q + R) \dots\dots\dots(ii)$$

So, from statement –II alone also, we cannot say that P scored more than Q or not.

And even after combining both the statements, we cannot definitely say that P scored more than Q or not. Therefore, this question cannot be answered even by using both of the statements together.

71. Answer: (a*)

Explanation:

- **Option (a) is Correct:** This statement best reflects the logical and rational message conveyed by the passage. The passage mentions that *"poetry does not posit or expect any belief in absolute truths" and that it "abides by the plurality of life and existence."* This implies that poetry, unlike science or religion, which often seek absolute truths, recognizes and accepts the imperfections and contradictions inherent in humans.
- **Option (b) is incorrect:** While the passage discusses how poetry does not deal with absolute truths, it does not suggest that poetry is an anathema to truth. Instead, it indicates that poetry operates within a different paradigm that values plurality and contradictions.
- **Option (c) is incorrect:** The passage does not emphasize poetry as merely romantic or imaginary. It focuses on the role of poetry in recognizing the plurality and contradictions of life, rather than categorizing it as purely about feelings.
- **Option (d) is incorrect:** Although the passage does state that *"poetry remains a partisan of democratic reality" and "proposes both humility and defiance,"* the primary message is about poetry's acceptance of imperfections and contradictions, rather than framing it explicitly as dynamic resistance. Further, the passage does not mention violence, so it goes beyond the scope of the passage as well.
- **There is a possibility for Option (d) to be correct:*** *The passage mentions "forces or individuals who claim to have absolute truths in their grasp tend to turn dictatorial and tyrannical" and "Against the tyranny of truth, poetry remains a partisan of democratic reality. Against the arrogance of power, wealth and hierarchy, poetry proposes both humility and defiance." Therefore, it can be concluded that in a world of violence, tyranny and bigotry, poetry is a form of dynamic resistance.*

72. Answer: (d)

Explanation:

- **Assumption 1 is invalid:** The passage does not suggest that flowers are creations of Nature's luxury. It emphasizes the functional role of flowers in attracting insects for pollination. The passage states, "The flower was not invented to please us. It flaunted its petals and spread its perfume to attract an insect." This indicates that flowers have a practical purpose rather than being luxurious creations.

- **Assumption 2 is invalid:** The author believes flowers to have functional utility, rather than being things of beauty. S/he highlights the practical role of flowers in pollination: "The insect carries the pollen from flower to flower so that pollen is not carried away by wind and thus not wasted." This demonstrates the author's recognition of the usefulness of flowers beyond their beauty.

73. Answer: (a)

Explanation:

It is given that age of P and Q is less than 100 but more than 10. That is, both P and Q are two-digit numbers.

So, $10 < P, Q < 100$

Also, let $P = xy$, then $Q = yx$

Using statement-I alone:

$P > Q$

There are various possibilities:

$81 > 18$

$72 > 27$... and so on. It alone is not sufficient.

Using statement-II alone:

$P + Q = (11/6) (P - Q)$

Or $10x + y + 10y + x = (11/6) (10x + y - 10y - x)$ Or $11(x + y) = (11/6) (9x - 9y)$

Or $6(x + y) = 9(x - y)$ Or $2x + 2y = 3x - 3y$ Or $x = 5y$

As, x and y must be one-digit numbers, y must be 1 and x therefore must be 5. So, $P = 51$ and $Q = 15$

So, difference in their ages = $P - Q = 51 - 15 = 36$ years So, statement-II alone is sufficient to answer this question.

Hence, the question can be answered by using one of the statements alone, but cannot be answered using the other statement alone.

74. Answer: (c)

Explanation:

Main statement: Pradeep becomes either a Director or a Producer. It means Pradeep cannot be both.

Also, he must be one of them.

SP:

Statement S: Pradeep is not a Producer.

It means he must be a Director, as given in statement P.

So, statement P follows from S and they are logically consistent with the main statement.

RQ:

Statement R: Pradeep is not a Director.

It means he must be a Producer, as given in statement Q.

So, statement Q follows from R and they are logically consistent with the main statement.

75. Answer: (d)

Explanation:

On changing the mathematical signs according to the given instructions, we get: $10 - 30 \times 100 \div 50 + 25$

$= 10 - 30 \times 2 + 25$

$= 10 - 60 + 25$

$$= 35 - 60$$

$$= - 25$$

76. Answer: (d)

Explanation:

Statement 1:

$2x(S)3y$ and $3x(T)4z$, then $9y(P)8z$

On placing symbols according to the given instructions: $2x \geq 3y$ and $3x = 4z$, then $9y > 8z$

$$x \geq 3y/2 \dots\dots (a)$$

$$3x = 4z \dots\dots (b)$$

$$\text{So, } 4z/3 \geq 3y/2 \text{ Or } 8z \geq 9y$$

Hence, statement 1 is not correct.

Statement 2:

$x(Q)2y$ and $y(R)z$, then $x(R)z$.

On placing symbols according to the given instructions: $x < 2y$ and $y \leq z$, then $x \leq z$.

$$x < 2y \quad (a)$$

$$y \leq z$$

$$\text{or } 2y \leq 2z \quad (b)$$

$$\text{So, } x < 2y \leq 2z \text{ Or } x < 2z$$

But from this we cannot deduce that $x \leq z$

Hence, statement 2 is also not correct.

77. Answer: (a)

Explanation:

Here, the code is being calculated by multiplying the position values of the alphabet. $ABCD = 24$

$$1 \times 2 \times 3 \times 4 = 24$$

$$EFGH = 1680$$

$$5 \times 6 \times 7 \times 8 = 1680$$

$$IJKL = 9 \times 10 \times 11 \times 12 = 11880$$

78. Answer: (d)

Explanation:

In a certain code, 'POT' is written as 'ATOP' and 'TRAP' is written as 'APART', Logic: Here the word is being reversed and prefix 'A' is being added to the front. Reverse order of POT = TOP

Thus, code of POT will be 'ATOP'. Reverse order of TRAP = PART

Thus, code of TRAP will be 'APART'.

Similarly, Reverse order of ARENA = ANERA Thus, code of ARENA will be 'AANERA'.

79. Answer: (b)

Explanation:

Given series: 3, 14, 39, 84, *, 258

The series follows the following pattern: $1^3 + 1^2 + 1 = 3$

$$2^3 + 2^2 + 2 = 14$$

$$3^3 + 3^2 + 3 = 39$$

$$4^3 + 4^2 + 4 = 84$$

$$* = 5^3 + 5^2 + 5 = 155$$

$$6^3 + 6^2 + 6 = 258$$

Thus, missing number is 155.

80. Answer: (b)

Explanation:

In some code, letters P, Q, R, S, T represent numbers 4, 5, 10, 12, 15. It is not known which letter represents which number.

Here, $Q - S = 2S$

So, $Q = 3S$(i)

The only possible values of S and Q are:

If $S = 4$, then $Q = 12$ Or, if $S = 5$, then $Q = 15$

Also, $T = R + S + 3$ (ii)

Case 1: If $S = 4$ and $Q = 12$ $T = R + S + 3 = R + 7$

This is only possible if $T = 12$ and $R = 5$.

But both Q and T cannot be 12. So, we can eliminate this case.

Case 2: If $S = 5$ and $Q = 15$

$T = R + S + 3 = R + 8$

This is only possible if $T = 12$ and $R = 4$.

So, we get $R = 4$, $S = 5$, $T = 12$ and $Q = 15$. It means P must be 10. So, $P + R - T = 10 + 4 - 12 = 2$