MAT Intelligence and Critical Reasoning Sample Paper-3

Duration: 24 Minutes **Maximum Marks: 30**

Instructions

- This paper contains **30** Multiple Choice Questions.
- Each correct answer carries **+1 mark**.
- Each incorrect answer carries **0.25 mark**.
- No negative marking for unattempted questions.
- Use of mobile phones, smartwatches, or any electronic gadgets is strictly prohibited.

Q1. A says, "That girl is the daughter of the only son of my mother." How is the girl related to A?

(A) Daughter

(B) Sister

(C) Niece

(D) Cousin

Q2. Pointing to a man, a woman said, "His mother is the only daughter of my grandfather." How is the man related to the woman?

(A) Brother

(B) Son

(C) Cousin

(D) Nephew

Q3. If $A + B$ means A is father of B, $A - B$ means A is wife of B, $A \times B$ means A is brother of B, $A \div B$ means A is daughter of B, then what does $P \times Q + R - S$ represent?

(A) P is uncle of S

(B) P is father of S

(C) P is brother-in-law of S

(D) P is grandfather of S

Q4. Study the information:
A family has A, B, C, D, E and F.
(1) A is father of B.
(2) B is sister of C.
(3) C is married to D.
(4) E is mother of D.
(5) F is son of C.

How is E related to B?

(A) Grandmother

(B) Mother-in-law

(C) Aunt

(D) Sister-in-law

Q5. Introducing a boy, a girl said, "He is the son of my father's sister's only son." How is the boy related to the girl?

(A) Brother

(B) Cousin

(C) Nephew

(D) Uncle

Q6. Statement: A large number of students are failing in mathematics exams.
Courses of Action:
I. Extra remedial classes should be arranged.
II. Mathematics should be removed from the curriculum.

(A) Only I follows

(B) Only II follows

(C) Both follow

(D) Neither follows

Q7. Statement: There is a sudden rise in online shopping during festive seasons.

Cause A: Attractive discounts are offered by e-commerce companies.
Cause B: People avoid all digital payments during festivals.

(A) Only A is valid

(B) Only B is valid

(C) Both A and B are valid

(D) Neither A nor B is valid

Q8. Statement: Traffic congestion in the city has become unmanageable during peak hours. Courses of Action:
I. Staggered office timings should be introduced.
II. All private vehicles should be banned permanently.

(A) Only I follows

(B) Only II follows

(C) Both follow

(D) Neither follows

Q9. Statement: The price of vegetables has suddenly increased in the market.
Cause A: Heavy rainfall damaged crops.
Cause B: Government has reduced import taxes on vegetables.

(A) Only A is valid

(B) Only B is valid

(C) Both A and B are valid

(D) Neither A nor B is valid

Q10. **Statements:** All pens are tools.
Some tools are sharp objects.
No sharp object is safe.

Conclusions:
I. Some pens are not safe.
II. Some tools are not safe.

(A) Only I follows
(B) Only II follows
(C) Both follow
(D) Neither follows

Q11. **Statements:** All roses are flowers.
All flowers are plants.
Some plants are tall.

Conclusions:
I. Some roses are plants.
II. Some flowers are tall.

(A) Only I follows
(B) Only II follows
(C) Both follow
(D) Neither follows

Q12. **Statements:** Some books are novels.
All novels are stories.
No story is false.

Conclusions:
I. Some books are not false.
II. Some stories are books.

(A) Only I follows
(B) Only II follows

(C) Both follow

(D) Neither follows

Q13. Six persons A, B, C, D, E and F sit around a circle facing centre.
A sits opposite C.
B sits between A and D.
E is not adjacent to C.
F sits opposite D.

Who sits between E and F?

(A) A

(B) B

(C) C

(D) D

Q14. Seven persons sit in a row facing north.
P is second to left of Q.
R is at one end.
S is between P and T.
U is not adjacent to R.

Who is in the middle?

(A) P

(B) Q

(C) S

(D) T

Q15. Five boxes A, B, C, D, E are stacked vertically.
C is above B but below A.
E is at the bottom.
D is above A.

Which box is in the middle?

(A) A

(B) B

(C) C

(D) D

Q16. In a code language, "STUDENT" is written as "TUVFODU". How is "EXAM" written?

(A) FYBN

(B) FZBN

(C) DYBM

(D) EZBN

Q17. If "BRIGHT" is coded as "CSJHIU", then "FUTURE" is coded as:

(A) GVUVSF

(B) GUVUSF

(C) GUUVSF

(D) GVVUSF

Q18. If "WORLD" is coded as "XPSME", then "PEACE" is coded as:

(A) QFBDF

(B) QGBEF

(C) PGACF

(D) QFADF

Q19. Find the next term:

1, 3, 6, 10, 15, 21, ?

(A) 27

(B) 28

(C) 30

(D) 31

Q20. Find the missing term:

2, 5, 10, 17, 26, ?

(A) 35

(B) 37

(C) 38

(D) 39

Q21. Find the next term:

A, C, F, J, O, ?

(A) T

(B) U

(C) V

(D) W

Q22. Seed : Tree :: Idea : ?

(A) Mind

(B) Thought

(C) Innovation

(D) Brain

Q23. Choose the odd one out:

(A) Cube

(B) Sphere

(C) Cylinder

(D) Triangle

Q24. A person walks 15 m east, then 20 m north, then 15 m west, then 10 m south.

How far is he from the starting point?

(A) 10 m

(B) 20 m

(C) 15 m

(D) 25 m

Q25. Ravi walks 6 km north, then 8 km east, then 6 km south.

How far is he from the starting point?

(A) 6 km

(B) 8 km

(C) 10 km

(D) 12 km

Q26. Assertion (A): Practice improves reasoning ability.

Reason (R): Repeated solving of puzzles strengthens logical thinking.

(A) Both A and R are true and R is correct explanation

(B) Both A and R are true but R is not correct explanation

(C) A is true but R is false

(D) A is false but R is true

Q27. Eight people sit around a square table.

Each side has two people.

A sits opposite B. C sits next to A. D is opposite C.

Who sits opposite D?

(A) A

(B) B

(C) C

(D) Cannot be determined

Q28. **Statements:**

Some apples are fruits. All fruits are healthy. No healthy thing is harmful.

Conclusions:

I. Some apples are not harmful. II. Some fruits are not harmful.

(A) Only I follows

(B) Only II follows

(C) Both follow

(D) Neither follows

Q29. Statement: Internet usage has increased drastically in rural areas.

Cause A: Affordable smartphones are widely available. Cause B: Internet services have become cheaper.

(A) Only A is valid

(B) Only B is valid

(C) Both A and B are valid

(D) Neither A nor B is valid

Q30. Five persons A, B, C, D and E have different heights.

A is taller than B but shorter than C. D is taller than E but shorter than B.

Who is the tallest?

(A) A

(B) B

(C) C

(D) D

Detailed Solutions

Q1.

Solution

Concept: This question tests understanding of blood relations based on a descriptive statement. The key is to break down the complex relationship described by A step-by-step.

Solution: Step 1: Analyze A's statement: "That girl is the daughter of the wife of the only son of my mother."
Step 2: Identify "my mother." This refers to A's mother.
Step 3: Identify "the only son of my mother." Since A's mother has only one son, this son must be A himself (assuming A is male). If A were female, it would imply A has a brother who is the only son, which contradicts "only son". Thus, A is male.
Step 4: Identify "the wife of the only son of my mother." This refers to the wife of A.
Step 5: The statement now translates to: "That girl is the daughter of my wife."
Step 6: The daughter of A's wife is A's daughter. Therefore, the girl is A's daughter.

Final Answer: Daughter

Answer: (A)

Go Back to Question 1

Q2.

Solution

Concept: This question requires deciphering a blood relation from a woman's statement about a man. We need to trace the relationships described to determine the connection between the man and the woman.

Solution: Step 1: Analyze the woman's statement: "His mother is the sister of the grandfather of my son."
Step 2: Consider "my son." The woman's son has a grandfather.
Step 3: Identify "the grandfather of my son." This is the woman's father.
Step 4: The statement now says: "His mother is the sister of my father."
Step 5: "The sister of my father" is the woman's paternal aunt (father's sister).
Step 6: So, the man's mother is the woman's paternal aunt.
Step 7: If the man's mother is the woman's paternal aunt, then the man's mother is the sister of the woman's father.
Step 8: This makes the man's mother the woman's aunt.
Step 9: If the man's mother is the woman's aunt, then the man's father is the woman's uncle (brother of woman's father).
Step 10: Consequently, the man is the woman's cousin.

Final Answer: Cousin

Answer: (C)

Go Back to Question 2

Q3.

Solution

Concept: This question tests the ability to interpret coded relationship symbols and construct a family relationship to determine the meaning of an expression.

Solution: Given:

$$A + B \Rightarrow A \text{ is father of } B$$

$$A - B \Rightarrow A \text{ is wife of } B$$

$$A \times B \Rightarrow A \text{ is brother of } B$$

$$A \div B \Rightarrow A \text{ is daughter of } B$$

We need:

$$P \text{ is maternal grandfather of } Q$$

i.e., P must be the father of Q's mother.

Step 1: Analyze option A

$$P \times R + Q$$

- $P \times R$: P is brother of R - $R + Q$: R is father of Q So, P becomes the brother of Q's father, not maternal grandfather.

Step 2: Check conclusion None of the given expressions exactly represent:

$$P \text{ is maternal grandfather of } Q$$

The closest meaningful relation formed is:

$$P \text{ as uncle of } Q$$

Hence, the question likely contains an error in the stated relationship.

Final Answer: $\boxed{P \times R + Q}$

Answer: (A)

Go Back to Question 3

Q4.

Solution

Concept: This question requires interpreting a family tree diagram and additional textual information to determine a specific blood relationship.

Solution: Step 1: Analyze the family tree and given information.
The diagram shows A is parent to B and C. B is parent to D and E. C is parent to F and G.
Given:
- E is the sister of D. (D and E are siblings, children of B).
- F is the brother of G. (F and G are siblings, children of C).

Step 2: Determine the relationship between B and F.
B is the parent of E and D.
C is the parent of F and G.
B and C are siblings (children of A).
Since B is the sibling of C (F's parent), B is the aunt or uncle of F.
The question asks how B is related to F. B is the sibling of F's parent (C). Therefore, B is F's uncle (if male) or aunt (if female). The options include Uncle, Aunt, Father, Grandfather. Assuming B is male, B would be F's uncle.

Final Answer: Uncle

Answer: (A)

Go Back to Question 4

Q5.

Solution

Concept: This problem requires careful analysis of a descriptive statement to determine a blood relationship. We need to break down the statement step-by-step, identifying the speaker and the relationships involved.

Solution: Step 1: Analyze the girl's statement: "He is the son of my father's sister's only son."
Step 2: Identify "my father." This refers to the girl's father.
Step 3: Identify "my father's sister." This is the girl's paternal aunt.
Step 4: Identify "my father's sister's only son." This is the girl's cousin (specifically, her paternal male cousin, son of her father's sister).
Step 5: The statement now means: "He (the boy) is the son of my cousin."
Step 6: If the boy is the son of the girl's cousin, then the boy is the girl's cousin's son. This makes the boy the girl's first cousin once removed, or simply her cousin in a broader sense.

Let's trace it again:
Girl's Father -> Father's Sister (Paternal Aunt) -> Aunt's Only Son (Girl's Cousin).
The boy is the son of this cousin.
So, the boy is the son of the girl's cousin. This makes the boy the girl's cousin, or more specifically, the son of her cousin. Among the options, "Cousin" is the most appropriate broader relationship.

Final Answer: Cousin

Answer: (B)

Go Back to Question 5

Q6.

Solution

Concept: This is a "Course of Action" question. We must evaluate the proposed actions based on the statement to determine if they are logical, feasible, and effective in addressing the stated issue.

Statement: A large number of students are failing in mathematics exams.

Courses of Action:
I. Extra remedial classes should be arranged.
II. Mathematics should be removed from the curriculum.

Analysis of Course of Action I: Arranging extra remedial classes is a direct and constructive approach to address the problem of students failing in mathematics. Remedial classes can provide additional support, clarification, and practice for students who are struggling, helping them to improve their understanding and performance. This is a practical and effective course of action. This course of action is valid.

Analysis of Course of Action II: Removing mathematics from the curriculum is an extreme and counterproductive measure. Mathematics is a fundamental subject with broad applications. Removing it would not solve the underlying issue of students' difficulties but would instead deprive them of essential skills and knowledge. This action is impractical and detrimental. This course of action is not valid.

Conclusion: Only Course of Action I provides a sensible and effective solution to help students improve their performance in mathematics.

Final Answer: Only I follows

Answer: (A)

Go Back to Question 6

Q7.

Solution

Concept: This is a "Cause and Effect" reasoning question. We need to assess whether the given potential causes logically explain the stated effect.

Statement (Effect): There is a sudden rise in online shopping during festive seasons.

Cause A: Attractive discounts are offered by e-commerce companies.
Cause B: People avoid all digital payments during festivals.

Analysis of Cause A: Festive seasons often see e-commerce companies offering significant discounts and promotions to attract customers. These attractive offers make products more affordable and appealing, directly encouraging people to shop online more frequently. Increased discounts are a primary driver for the rise in online shopping during these periods. This is a valid cause.

Analysis of Cause B: The statement suggests that people avoid digital payments during festivals. This is contrary to the observed effect (rise in online shopping). Online shopping heavily relies on digital payments. If people were avoiding digital payments, online shopping would likely decrease, not increase. Therefore, this cause contradicts the observed effect and is not valid.

Conclusion: Only Cause A provides a logical and direct explanation for the sudden rise in online shopping during festive seasons.

Final Answer: Only A is valid

Answer: (A)

Go Back to Question 7

Q8.

Solution

Concept: This question requires evaluating proposed "Courses of Action" in response to a problem. The actions must be logical, feasible, and effective in addressing the stated issue.

Statement: Traffic congestion in the city has become unmanageable during peak hours.

Courses of Action: I. Staggered office timings should be introduced.
II. All private vehicles should be banned permanently.

Analysis of Course of Action I: Introducing staggered office timings means having different start and end times for various offices and businesses. This helps in distributing the traffic load over a longer period, reducing the concentration of vehicles on the road during peak hours. This is a practical and effective measure to alleviate traffic congestion. This course of action is valid.

Analysis of Course of Action II: Permanently banning all private vehicles is an extreme, impractical, and disproportionate measure. Private vehicles are essential for many citizens' daily lives, and a complete ban would severely disrupt transportation and personal freedom. While reducing the number of vehicles might help, a permanent ban is not a feasible or sustainable solution and would likely face immense public opposition and logistical challenges. This course of action is not valid.

Conclusion: Only Course of Action I offers a practical and effective approach to manage traffic congestion by distributing the load.

Final Answer: Only I follows

Answer: (A)

Go Back to Question 8

Q9.

Solution

Concept: This is a "Cause and Effect" reasoning question. We need to determine if the given potential causes logically explain the stated effect.

Statement (Effect): The price of vegetables has suddenly increased in the market.

Cause A: Heavy rainfall damaged crops.
Cause B: Government has reduced import taxes on vegetables.

Analysis of Cause A: Heavy rainfall can indeed damage crops, leading to a reduced supply of vegetables. When the supply of a product decreases while demand remains relatively constant or increases, the price tends to rise. Therefore, crop damage due to heavy rainfall is a direct cause of increased vegetable prices. This is a valid cause.

Analysis of Cause B: Reducing import taxes on vegetables would make imported vegetables cheaper. If more vegetables are imported due to lower taxes, this would generally increase the overall supply of vegetables in the market. An increase in supply typically leads to a decrease in prices, not an increase. Therefore, reduced import taxes would likely lead to lower prices, contradicting the observed effect. This is not a valid cause for the price increase.

Conclusion: Only Cause A provides a logical explanation for the sudden increase in vegetable prices.

Final Answer: Only A is valid

Answer: (A)

Go Back to Question 9

Q10.

Solution

Concept: This is a Syllogism question. We need to evaluate the given conclusions based on the provided statements to see if they logically follow.

Statements: 1. All pens are tools. (Pens $\subset$ Tools)
2. Some tools are sharp objects. (Overlap between Tools and Sharp Objects)
3. No sharp object is safe. (No overlap between Sharp Objects and Safe)

Analysis of Conclusion I: Some pens are not safe. From statement 1, all pens are tools. From statement 2, some tools are sharp objects. From statement 3, no sharp object is safe. This implies that the tools which are sharp objects are not safe. Since all pens are tools, it's possible that some pens are among these sharp tools (and thus not safe), or they might be among the tools that are not sharp. If a pen is a sharp tool, it is not safe. However, the statements do not guarantee that any pen falls into the category of sharp tools. It's possible all pens are tools that are not sharp objects, and these non-sharp tools might be safe. Thus, we cannot definitively conclude that some pens are not safe. This conclusion does not necessarily follow.

Analysis of Conclusion II: Some tools are not safe. From statement 2, some tools are sharp objects. From statement 3, no sharp object is safe. Therefore, those tools which are sharp objects are indeed not safe. This directly implies that there exist some tools (the ones that are sharp objects) that are not safe. This conclusion logically follows.

Final Answer: Only II follows

Answer: (B)

Go Back to Question 10

Q11.

Solution

Concept: This question involves syllogisms. We need to determine which conclusions logically follow from the given statements using logical deduction or Venn diagrams.

Statements: 1. All roses are flowers. (Roses $\subset$ Flowers)
2. Some flowers are plants. (Overlap between Flowers and Plants)
3. All plants are tall. (Plants $\subset$ Tall)

Analysis of Conclusion I: Some roses are plants. From statement 1, all roses are flowers. From statement 2, some flowers are plants. This means there is an overlap between the set of flowers and the set of plants. Since all roses are flowers, and some of these flowers are plants, it's possible that some roses fall into this overlapping category. However, it's also possible that the flowers that are plants are not roses. The statements do not guarantee that any rose is a plant. This conclusion does not necessarily follow.

Analysis of Conclusion II: Some flowers are tall. From statement 2, some flowers are plants. From statement 3, all plants are tall. Therefore, the flowers that are plants are indeed tall. This directly implies that there exist some flowers (the ones that are plants) that are tall. This conclusion logically follows.

Final Answer: Only II follows

Answer: (B)

Go Back to Question 11

Q12.

Solution

Concept: This question involves syllogisms. We need to determine which conclusions logically follow from the given statements.

Statements: 1. Some books are novels. (Overlap between Books and Novels)
2. All novels are stories. (Novels $\subset$ Stories)
3. No story is false. (No overlap between Stories and False)

Analysis of Conclusion I: Some books are not false. From statement 1, some books are novels. From statement 2, all novels are stories. This implies that the books which are novels are also stories. From statement 3, no story is false. Therefore, those books which are novels (and thus stories) cannot be false. This leads to the conclusion that some books (the ones that are novels) are not false. This conclusion logically follows.

Analysis of Conclusion II: Some stories are books. From statement 1, some books are novels. From statement 2, all novels are stories. This means that the books which are novels are also stories. Therefore, there exist some stories (the ones that are novels) which are books. This conclusion logically follows.

Final Answer: Both follow

Answer: (C)

Go Back to Question 12

Q13.

Solution

Concept: This is a circular arrangement problem. We need to place six friends around a circular table facing the center based on the given relative positions and then determine who sits between two specific persons.

Solution:
Arrange the six persons around the table.

$$A \text{ sits opposite } D$$

Let A be at position 1, so D is at position 4.

$$A(1), \quad D(4)$$

B sits immediate right of A, so B is at position 2.

$$A(1),\ B(2),\ D(4)$$

E sits opposite B, so E is at position 5.

$$A(1),\ B(2),\ D(4),\ E(5)$$

The remaining positions are 3 and 6 for C and F.
C is not adjacent to D. Since D is at 4, adjacent seats are 3 and 5. Position 5 already has E, so C cannot be at 3.
Hence,

$$C(6), \quad F(3)$$

Final arrangement:

$$A,\ B,\ F,\ D,\ E,\ C$$

D sits between E and F.

Final Answer: D

Answer: (D)

Go Back to Question 13

Q14.

Solution

Concept: This is a linear arrangement puzzle. We need to place five persons in a row based on given clues and identify the person in the middle position.

Solution:

There are five positions in a row numbered 1 to 5 from left to right.

- P sits second to the right of Q $\Rightarrow$ Q _ P
- R sits immediate left of T $\Rightarrow$ RT
- S is not at any end.
- Q is not adjacent to R.

Since P is second to the right of Q, P cannot be at position 1. So, place P at position 5 and Q at position 3.

$$_ \quad _ \quad Q \quad _ \quad P$$

Now, S cannot be at an end, so place S at position 4.

$$_ \quad _ \quad Q \quad S \quad P$$

R cannot be adjacent to Q, so R cannot be at position 2 or 4. Thus, R must be at position 1, and T will be at position 2.

$$R \quad T \quad Q \quad S \quad P$$

Hence, the person sitting in the middle is Q.

Final Answer: Q

Answer: (B)

Go Back to Question 14

Q15.

Solution

Concept: This is a vertical arrangement puzzle. We need to stack five boxes based on the given positional clues and identify the box in the middle.

Solution: There are five boxes. Let's number the positions from 1 (bottom) to 5 (top). The middle position is 3.

(2) E is at the bottom. So, E is at position 1. Position 1: E

(1) C is above B but below A. This means the order is A > C > B (in terms of position number). So, A is above C, and C is above B.
(4) D is above A. So, D > A.
Combining these: D > A > C > B.

This gives a relative order for four people: D, A, C, B.
We have E at position 1.
The order D > A > C > B implies D is highest, then A, then C, then B.
So, if we arrange them from top to bottom: D, A, C, B.
We know E is at the bottom (position 1).
So, the order from bottom to top could be: E, B, C, A, D.
Let's check the positions:
Position 5: D
Position 4: A
Position 3: C
Position 2: B
Position 1: E

Let's verify all conditions:
(1) C is above B but below A. C(3) is above B(2), and C(3) is below A(4). Yes.
(2) E is at the bottom. E(1). Yes.
(3) D is above A. D(5) is above A(4). Yes.

This arrangement is valid: E (bottom), B, C, A, D (top).
The middle position is the 3rd position.
The box in the middle is C.

Final Answer: C

Answer: (C)

Go Back to Question 15

Q16.

Solution

Concept: This question tests the ability to identify a letter-shifting pattern used in a code language and apply it to a new word.

Solution:

Analyze the given code:

$$\text{STUDENT} \rightarrow \text{TUVFODU}$$

Observe the first few letters:

$$S \rightarrow T, \quad T \rightarrow U, \quad U \rightarrow V$$

Each letter is shifted by +1.

Applying the same pattern to EXAM:

$$E \rightarrow F$$

$$X \rightarrow Y$$

$$A \rightarrow B$$

$$M \rightarrow N$$

Thus,

$$\text{EXAM} \rightarrow \text{FYBN}$$

Final Answer: FYBN

Answer: (A)

Go Back to Question 16

Q17.

Solution

Concept: This question requires identifying a coding pattern based on letter shifts and applying it to a new word.

Solution: Step 1: Analyze the given code. BRIGHT → CSJHIU

Step 2: Determine the pattern by comparing letters.
B → C (+1 shift)
R → S (+1 shift)
I → J (+1 shift)
G → H (+1 shift)
H → I (+1 shift)
T → U (+1 shift)

The pattern is consistently a +1 shift for each letter.

Step 3: Apply the pattern to "FUTURE".
F (+1) = G
U (+1) = V
T (+1) = U
U (+1) = V
R (+1) = S
E (+1) = F

Step 4: Combine the coded letters. The coded word for FUTURE is GVUVSF.

Step 5: Match with the given options. Option A: GVUVSF. This matches our result.

Final Answer: GVUVSF

Answer: (A)

Go Back to Question 17

Q18.

Solution

Concept: This question tests the ability to identify a coding pattern based on letter relationships and apply it to a new word.

Solution: Step 1: Analyze the given code. WORLD → XPSME

Step 2: Determine the pattern by comparing letters.
W → X (+1 shift)
O → P (+1 shift)
R → S (+1 shift)
L → M (+1 shift)
D → E (+1 shift)

The pattern is consistently a +1 shift for each letter.

Step 3: Apply the pattern to "PEACE".
P (+1) = Q
E (+1) = F
A (+1) = B
C (+1) = D
E (+1) = F

Step 4: Combine the coded letters. The coded word for PEACE is QFBDF.

Step 5: Match with the given options. Option A: QFBDF. This matches our result.

Final Answer: QFBDF

Answer: (A)

Go Back to Question 18

Q19.

Solution

Concept: This question requires identifying a coding pattern based on letter shifts and applying it to a new word.

Solution: Step 1: Analyze the given code. APPLE → CRRNG

Step 2: Determine the pattern by comparing letters.
A → C (+2 shift)
P → R (+2 shift)
P → R (+2 shift)
L → N (+2 shift)
E → G (+2 shift)

The pattern is a consistent +2 shift for each letter.

Step 3: Apply the pattern to "MANGO".
M (+2) = O
A (+2) = C
N (+2) = P
G (+2) = I
O (+2) = Q

Step 4: Combine the coded letters. The coded word for MANGO is OCPIQ.

Step 5: Match with the given options. Option A: OCPIQ. This matches our result.

Final Answer: OCPIQ

Answer: (A)

Go Back to Question 19

Q20.

Solution

Concept: This is a number series question. We need to identify the pattern in the given sequence and find the next term.

Solution: The given series is: 1, 3, 6, 10, 15, 21, ?

Let's find the difference between consecutive terms:
3 - 1 = 2
6 - 3 = 3
10 - 6 = 4
15 - 10 = 5
21 - 15 = 6

The differences are increasing by 1 each time (2, 3, 4, 5, 6). This pattern indicates adding consecutive natural numbers.
The next difference should be 6 + 1 = 7.

To find the next term, add this difference to the last term:
21 + 7 = 28.

Alternatively, these are known as triangular numbers:
1st term = 1 = 1
2nd term = 1 + 2 = 3
3rd term = 1 + 2 + 3 = 6
4th term = 1 + 2 + 3 + 4 = 10
5th term = 1 + 2 + 3 + 4 + 5 = 15
6th term = 1 + 2 + 3 + 4 + 5 + 6 = 21
Following this pattern, the 7th term would be the sum of the first 7 natural numbers:
Sum = 1 + 2 + 3 + 4 + 5 + 6 + 7 = 28.

Final Answer: 28

Answer: (B)

Go Back to Question 20

Q21.

Solution

Concept: This is a letter series question. We need to identify the pattern in the sequence of letters and find the next letter.

Solution: The given series is: A, C, F, J, O, ?

Let's find the difference in the position of each consecutive letter in the alphabet:
A to C: +2 letters (A → B → C)
C to F: +3 letters (C → D → E → F)
F to J: +4 letters (F → G → H → I → J)
J to O: +5 letters (J → K → L → M → N → O)

The pattern of the shift is increasing by 1 each time (+2, +3, +4, +5).
Following this pattern, the next shift should be +6.
O (+6) = O → P → Q → R → S → T. So the next letter is T.

Final Answer: T

Answer: (A)

Go Back to Question 21

Q22.

Solution

Concept: This is an analogy question. We need to find the relationship between the first pair of words (Seed : Tree) and apply that relationship to the second part (Idea : ?).

Solution: The relationship between "Seed" and "Tree" is that a Seed is the origin or beginning from which a Tree grows and develops. The Seed is the initial stage that leads to the full form of the Tree.

Now, we need to find a word that relates to "Idea" in the same way that "Tree" relates to "Seed". We are looking for the outcome or development of an Idea.
- Mind: The mind is where ideas originate or are processed, but it's not the development or outcome of an idea.
- Thought: A thought is closely related to an idea, but an idea can develop into a thought process or a more concrete concept.
- Innovation: An innovation is a new idea, method, or device; the action or process of innovating. An idea, when developed and implemented, often leads to an innovation. This represents the development and realization of an idea.
- Brain: The brain is the organ that contains the mind and processes thoughts and ideas. It's not the outcome of an idea.

An idea, when developed and implemented, often leads to an innovation. This matches the relationship of a seed developing into a tree.

Final Answer: Innovation

Answer: (C)

Go Back to Question 22

Q23.

Solution

Concept: This is an "Odd One Out" question. We need to identify the item that does not belong to the same category as the others.

Solution: The given options are:
Cube
Sphere
Cylinder
Triangle

Let's analyze the shapes:
Cube: A three-dimensional solid object bounded by six square faces. It is a 3D shape.
Sphere: A perfectly round geometrical object in three-dimensional space. It is a 3D shape.
Cylinder: A three-dimensional solid with two parallel circular bases and a curved surface. It is a 3D shape. Triangle: A polygon with three edges and three vertices. It is a two-dimensional shape.

The Cube, Sphere, and Cylinder are all three-dimensional objects. The Triangle is a two-dimensional shape. Therefore, the Triangle is the odd one out.

Final Answer: Triangle

Answer: (D)

Go Back to Question 23

Q24.

Solution

Concept: This is a direction sense problem. We need to determine the final displacement (distance from the starting point) after a series of movements.

Solution: Let's track the person's movements on a coordinate plane. Assume the starting point is the origin (0,0). East is the positive x-axis, North is the positive y-axis.

Step 1: Walks 15 m East.
Position: (15, 0). Facing East.

Step 2: Then 20 m North.
Moves 20 m North.
Position: (15, 0 + 20) = (15, 20). Facing North.

Step 3: Then 15 m West.
Moving West decreases the x-coordinate.
Position: (15 - 15, 20) = (0, 20). Facing West.

Step 4: Then 10 m South.
Moving South decreases the y-coordinate.
Position: (0, 20 - 10) = (0, 10). Facing South.

Step 5: Calculate the distance from the starting point (0,0).
The final position is (0, 10).
The distance from the starting point is the magnitude of the displacement vector, which is simply the y-coordinate since the x-coordinate is 0.
Distance = 10 m.
The direction is North.

The question asks "How far is he from the starting point?". The distance is 10 m.

Final Answer: 10 m

Answer: (A)

Go Back to Question 24

Q25.

Solution

Concept: This is a direction sense problem. We need to find the net displacement (distance from the starting point) after a series of movements.

Solution: Let's track Ravi's movements. Assume the starting point is A.

Step 1: Ravi walks 6 km North.
Displacement: (0, 6). Position relative to A: (0, 6). Facing North.

Step 2: Then 8 km East.
Displacement: (+8, 0). Position relative to A: (0+8, 6+0) = (8, 6). Facing East.

Step 3: Then 6 km South.
Moving South decreases the y-coordinate.
Displacement: (0, -6). Position relative to A: (8+0, 6-6) = (8, 0). Facing South.

Step 4: Determine the distance from the starting point A (0,0).
The final position is (8, 0).
The distance from the starting point is the magnitude of the displacement vector.
Distance = $\sqrt{8^2 + 0^2} = \sqrt{64} = 8$ km.
The direction is East.

The question asks "How far is he from the starting point?". The distance is 8 km.

Final Answer: 8 km

Answer: (B)

Go Back to Question 25

Q26.

Solution

Concept: This is an Assertion-Reasoning question. We need to evaluate the truthfulness of both statements and the correctness of the reason as an explanation for the assertion.

Assertion (A): Practice improves reasoning ability.
Reason (R): Repeated solving of puzzles strengthens logical thinking.

Analysis of Assertion (A): Practicing any skill, including reasoning, generally leads to improvement. Through repeated exposure to different problems and applying various logical strategies, one's ability to reason improves. The assertion is true.

Analysis of Reason (R): Solving puzzles, especially logical ones, directly involves applying analytical and logical thinking skills. Repeatedly engaging in such activities strengthens these cognitive abilities, including reasoning. Therefore, repeated solving of puzzles strengthens logical thinking, which in turn improves reasoning ability. The reason provides a valid mechanism and support for the assertion. The reason is true and correctly explains the assertion.

Conclusion: Both the assertion and the reason are true, and the reason correctly explains the assertion.

Final Answer: Both A and R are true and R is correct explanation

Answer: (A)

Go Back to Question 26

Q27.

Solution

Concept: This is an arrangement puzzle involving a square table. We need to place eight people based on relative positions and determine who sits opposite a specific person.

Solution: Arrange the 8 positions of the square table clockwise.

- P sits opposite Q.
- R sits immediate right of P.
- V sits opposite R.
- S is between T and U.

Let P be at one corner. Then:

$$P \rightarrow R \rightarrow _ \rightarrow _ \rightarrow Q \rightarrow V$$

Since S is between T and U, place them consecutively as:

$$T \quad S \quad U$$

A valid arrangement becomes:

$$P \quad R \quad T \quad S \quad Q \quad V \quad U \quad _$$

Now, S sits opposite U.
Final Answer: U

Answer: (A)
Go Back to Question 27

Q28.

Solution

Concept: This question involves syllogisms. We need to determine which conclusions logically follow from the given statements.

Statements: 1. Some apples are fruits. (Overlap between Apples and Fruits)
2. All fruits are healthy. (Fruits $\subset$ Healthy)
3. No healthy thing is harmful. (No overlap between Healthy and Harmful)

Analysis of Conclusion I: Some apples are not harmful. From statement 1, some apples are fruits. From statement 2, all fruits are healthy. This implies that the apples which are fruits are also healthy. From statement 3, no healthy thing is harmful. Since those specific apples are healthy, they cannot be harmful. Therefore, some apples (the ones that are fruits) are not harmful. This conclusion logically follows.

Analysis of Conclusion II: Some fruits are not harmful. From statement 2, all fruits are healthy. From statement 3, no healthy thing is harmful. Since all fruits are healthy, and no healthy thing is harmful, it logically follows that no fruit can be harmful. This directly implies that some fruits are not harmful (in fact, all fruits are not harmful). This conclusion logically follows.

Final Answer: Both follow

Answer: (C)

Go Back to Question 28

Q29.

Solution

Concept: This is a "Cause and Effect" reasoning question. We need to assess whether the given potential causes logically explain the stated effect.

Statement (Effect): Internet usage has increased drastically in rural areas.

Cause A: Affordable smartphones are widely available.
Cause B: Internet services have become cheaper.

Analysis of Cause A: The availability of affordable smartphones is a crucial factor for accessing the internet, especially in areas where other internet infrastructure might be limited. Smartphones provide a primary means for many people to get online. If affordable smartphones become widely available, it directly enables more people, particularly in rural areas where costs might be a barrier, to access the internet. This is a valid cause.

Analysis of Cause B: Cheaper internet services directly reduce the cost barrier to using the internet. When internet access becomes more affordable, it is more accessible to a larger population, including those in rural areas where income levels might be lower or where providers previously charged a premium. Reduced cost incentivizes usage and adoption. This is also a valid cause.

Conclusion: Both the increased availability of affordable smartphones (providing access) and cheaper internet services (reducing cost barrier) are significant factors that would lead to a drastic increase in internet usage in rural areas.

Final Answer: Both A and B are valid causes

Answer: (C)

Go Back to Question 29

Q30.

Solution

Concept: This is a logic puzzle involving relative comparisons of heights. We need to determine the tallest person based on given statements.

Solution: We are given information about the relative heights of five persons: A, B, C, D, E.

Statement 1: A is taller than B but shorter than C.
This can be written as: B < A < C.

Statement 2: D is taller than E but shorter than B.
This can be written as: E < D < B.

Now, let's combine these inequalities:
From Statement 1: B < A < C
From Statement 2: E < D < B

Combining these, we get the full order of heights:
E < D < B < A < C.

This shows the relative heights from shortest to tallest.
E is the shortest.
D is taller than E.
B is taller than D.
A is taller than B.
C is taller than A.

Therefore, C is the tallest among the five persons.

Final Answer: C

Answer: (C)

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Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	A	2	C	3	A	4	A	5	B
6	A	7	A	8	A	9	A	10	B
11	B	12	C	13	D	14	B	15	C
16	A	17	A	18	A	19	A	20	B
21	A	22	C	23	D	24	A	25	B
26	A	27	A	28	C	29	C	30	C