MAT Intelligence and Critical Reasoning Sample Paper-2

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. Pointing to a girl, Rohit said, "She is the daughter of the wife of the only son of my grandfather." How is the girl related to Rohit?

(A) Sister

(B) Cousin

(C) Aunt

(D) Niece

Q2. A man said, "The woman standing there is the sister of the grandfather of my son." How is the woman related to the man?

(A) Mother

(B) Aunt

(C) Sister

(D) Grandmother

Q3. If $A + B$ means A is the mother of B, $A - B$ means A is the brother of B, $A \times B$ means A is the husband of B, and $A \div B$ means A is the daughter of B,

then which of the following means "P is the maternal grandfather of Q"?

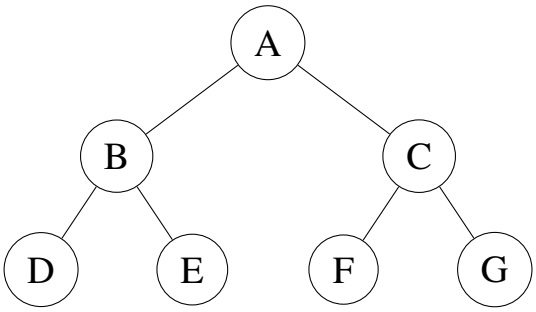
(A) $P \times R + Q$

(B) $P - R + Q$

(C) $P \times R \div Q$

(D) $P + R - Q$

Q4. Study the following family tree carefully:



If E is the sister of D and F is the brother of G, then how is B related to F?

(A) Uncle

(B) Aunt

(C) Father

(D) Grandfather

Q5. Introducing a man, a woman said, "His mother's husband is the son of my grandfather." How is the man related to the woman?

(A) Brother

(B) Cousin

(C) Son

(D) Uncle

Q6. **Statement:** Cases of fake job advertisements have increased rapidly on social media platforms.

Courses of Action:

I. Strict verification should be mandatory before posting job advertisements online.

II. All social media platforms should be banned temporarily.

(A) Only I follows

(B) Only II follows

(C) Both follow

(D) Neither follows

Q7. **Statement:** The number of students opting for online degree programs has increased significantly.
Cause A: Online courses are comparatively more flexible.
Cause B: Many universities now offer recognized online degrees.

(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:** Water scarcity has become severe in many urban regions during summer.
Courses of Action:
I. Rainwater harvesting systems should be made compulsory.
II. Residents should stop using water completely for gardening purposes.

(A) Only I follows

(B) Only II follows

(C) Both follow

(D) Neither follows

Q9. **Statement:** Several flights were delayed at the airport yesterday.
Cause A: Dense fog reduced visibility on runways.
Cause B: Airport authorities introduced new food courts.

(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. **Statement:** Incidents of mobile phone theft have increased in crowded markets.
Courses of Action:
I. CCTV surveillance should be increased in market areas.
II. Mobile phone sales should be restricted.

(A) Only I follows

(B) Only II follows

(C) Both follow

(D) Neither follows

Q11. **Statements:** All roses are flowers.
Some flowers are fragrant.
No fragrant thing is cheap.

Conclusions:
I. Some roses are not cheap.
II. Some flowers are not cheap.

(A) Only I follows

(B) Only II follows

(C) Both follow

(D) Neither follows

Q12. **Statements:** Some cars are bikes.
All bikes are vehicles.
No vehicle is stationary.

Conclusions:
I. Some cars are not stationary.
II. No bike is stationary.

(A) Only I follows

(B) Only II follows

(C) Both follow

(D) Neither follows

Q13. **Statements:** All musicians are artists.
Some artists are dancers.
No dancer is careless.

Conclusions:
I. Some artists are not careless.
II. No musician is careless.

(A) Only I follows

(B) Only II follows

(C) Both follow

(D) Neither follows

Q14. Six friends A, B, C, D, E and F are sitting around a circular table facing the centre.
(1) A sits opposite D.
(2) B sits immediate right of A.
(3) C is not adjacent to D.
(4) E sits opposite B.

Who sits immediate left of D?

(A) A

(B) B

(C) C

(D) F

Q15. Five persons P, Q, R, S and T are sitting in a straight line facing north.
(1) P sits second to the right of Q.
(2) R sits immediate left of T.
(3) S is not at any end.

(4) Q is not adjacent to R.

Who sits in the middle?

(A) P

(B) Q

(C) R

(D) S

Q16. Seven books A, B, C, D, E, F and G are arranged on a shelf.

(1) A is to the immediate left of B.

(2) C is between E and F.

(3) D is at one of the ends.

(4) G is immediate right of B.

Which book is in the middle?

(A) B

(B) C

(C) D

(D) E

Q17. In a certain code language, "PLAN" is coded as "QMBO". How will "TRAIN" be coded?

(A) USBJO

(B) USBJM

(C) USBJOF

(D) TRBJO

Q18. If "GARDEN" is coded as "HBSCEO", then how will "MARKET" be coded?

(A) NBSLFU

(B) NBSKFU

(C) NBSLFU

(D) NCSLFU

Q19. In a certain code language, "APPLE" is coded as "CRRNG". How will "MANGO" be coded?

(A) OCPIQ

(B) ODRIP

(C) NCPIQ

(D) OCPJP

Q20. Find the next term:

1, 4, 9, 16, 25, ?

(A) 30

(B) 35

(C) 36

(D) 49

Q21. Find the missing term:

BDF, FHJ, JLN, ?

(A) NPR

(B) NQT

(C) MOQ

(D) PRS

Q22. Find the next number:

5, 11, 23, 47, 95, ?

(A) 180

(B) 189

(C) 191

(D) 193

Q23. Doctor : Hospital :: Teacher : ?

(A) Classroom

(B) School

(C) Student

(D) Book

Q24. Choose the odd one out:

(A) Mercury

(B) Venus

(C) Earth

(D) Moon

Q25. A person walks 12 m south, then turns left and walks 5 m. He again turns left and walks 12 m.

In which direction is he from the starting point?

(A) North

(B) South

(C) East

(D) West

Q26. Ravi walks 10 m east, then 10 m north, then 10 m west and finally 5 m south.

How far and in which direction is he from the starting point?

(A) 5 m North

(B) 5 m South

(C) 10 m North

(D) 10 m South

Q27. Assertion (A): Logical reasoning requires analytical thinking.

Reason (R): Logical reasoning questions are always mathematical in nature.

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

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

(C) A is true but R is false

(D) A is false but R is true

Q28. Eight students are sitting around a square table, four at the corners and four at the sides.

(1) P sits opposite Q. (2) R sits immediate right of P. (3) S is between T and U. (4) V sits opposite R.

Who sits opposite S?

(A) T

(B) U

(C) P

(D) Cannot be determined

Q29. **Statements:**

All bananas are fruits. Some fruits are vegetables. No vegetable is sweet.

Conclusions:

I. Some bananas are sweet. II. Some fruits are not sweet.

(A) Only I follows

(B) Only II follows

(C) Both follow

(D) Neither follows

Q30. Five persons A, B, C, D and E bought cars of different colours — Red, Blue, Green, White and Black.

(1) A bought neither Red nor Blue. (2) B bought the White car. (3) C bought the Green car. (4) D bought neither Black nor Red. (5) E did not buy the Blue car.

Which colour car did A buy?

(A) Black

(B) Red

(C) Blue

(D) White

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 Rohit step-by-step.

Solution: Step 1: Analyze Rohit's **Statement:** "She is the daughter of the wife of the only son of my grandfather."
Step 2: Identify "my grandfather." This is Rohit's grandfather.
Step 3: Identify "the only son of my grandfather." Since Rohit's grandfather has only one son, this son must be Rohit's father.
Step 4: Identify "the wife of the only son of my grandfather." This refers to the wife of Rohit's father, which is Rohit's mother.
Step 5: The statement now translates to: "She is the daughter of my mother."
Step 6: The daughter of Rohit's mother is Rohit's sister. Therefore, the girl is Rohit's sister.

Final Answer: Sister

Answer: (A)

Go Back to Question 1

Q2.

Solution

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

Solution: Step 1: Analyze the man's **Statement:** "The woman standing there is the sister of the grandfather of my son."
Step 2: Consider "my son." The man's son has a grandfather.
Step 3: Identify "the grandfather of my son." This is the man's father.
Step 4: The statement now says: "The woman standing there is the sister of my father."
Step 5: The sister of the man's father is his paternal aunt (father's sister).

Final Answer: Aunt

Answer: (B)

Go Back to Question 2

Q3.

Solution

Concept: This question tests the ability to interpret coded relationship symbols and construct a family tree to determine if a specific relationship holds true.

Solution: The given codes are:
$A + B \implies$ A is the mother of B. (A is female)
$A - B \implies$ A is the brother of B. (A is male)
$A \times B \implies$ A is the husband of B. (A is male, B is female)
$A \div B \implies$ A is the daughter of B. (A is female)

We need to find the expression that means "P is the maternal grandfather of Q".
A maternal grandfather is the father of one's mother. So, P must be the father of Q's mother.
Let Q's mother be M. Then P is the father of M ($P + M$).
And M must be the mother of Q.

Let's analyze the options:
Option A: $P \times R + Q$
$P \times R \implies P$ is the husband of R. (P is male, R is female)
$R + Q \implies R$ is the mother of Q. (R is female)
So, P is the husband of R, and R is the mother of Q. This means P is the father of Q's mother. Therefore, P is the maternal grandfather of Q. This option fits the requirement.

Option B: $P - R + Q$
$P - R \implies P$ is the brother of R. (P is male)
$R + Q \implies R$ is the mother of Q. (R is female)
So, P is the brother of R, and R is the mother of Q. This means P is the maternal uncle of Q.

Option C: $P \times R \div Q$
$P \times R \implies P$ is the husband of R. (P is male, R is female)
$R \div Q \implies R$ is the daughter of Q. (R is female)
So, P is the husband of R, and R is the daughter of Q. This means Q is the parent of R. P is the husband of Q's daughter. P is the father-in-law of Q's daughter.

Option D: $P + R - Q$
$P + R \implies P$ is the mother of R. (P is female)
This cannot be correct as P is the maternal grandfather, implying P is male.

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 provided family tree and initial relationships.
The diagram shows A as a parent to B and C. B is a parent to D and E. C is a parent to F and G.
We are 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.
Since B and C are siblings (A is parent to both), B is the aunt or uncle of F and G.
Since C is the parent of F, and B is the sibling of C, 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 the aunt or uncle of F.

The diagram doesn't specify genders of A, B, C, D, E, F, G. However, since A is parent to B and C, and B and C are parents to the next generation, A is likely the grandparent. B is the child of A and sibling of C. C is the parent of F. Therefore, B is the sibling of F's parent. This makes B the aunt or uncle of F.

Assuming standard conventions for such diagrams or questions where gender might be inferred or crucial for options: If B is related to F as Uncle or Aunt, and these are options.
Given the options are Uncle, Aunt, Father, Grandfather. B is the sibling of F's parent (C). Hence B is F's uncle or aunt.

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, considering who is speaking and about whom.

Solution: Step 1: Analyze the woman's **Statement:** "His mother's husband is the son of my grandfather."
Step 2: Let the man being introduced be "M" and the woman speaking be "W".
Step 3: Consider "my grandfather." This refers to W's grandfather.
Step 4: Analyze "the son of my grandfather." This could be W's father (if W has no brothers) or W's uncle (if W has brothers). In these puzzles, "son of my grandfather" often refers to the speaker's father if the speaker is male and has no brothers, or the speaker's uncle. However, if the speaker is female and has brothers, it could be her father or her uncle. Let's consider the possibilities.
Step 5: Analyze "His mother's husband." This refers to the father of the man "M".
Step 6: So, the statement is: "M's father is the son of W's grandfather."

Case 1: The son of W's grandfather is W's father.
This means M's father = W's father. If M's father is also W's father, then M and W are siblings (brother and sister). The man (M) is the brother of the woman (W). This is an option.

Case 2: The son of W's grandfather is W's uncle.
This means M's father = W's uncle. If M's father is W's uncle, then M's father is the brother of W's father or mother. This makes M the cousin of W. Cousin is also an option.

Let's re-read: "Introducing a man, a woman said..."
If W's grandfather's son is W's father, then M's father is W's father. Thus, M and W are siblings. M is the brother of W.

Let's consider the possibility that "son of my grandfather" could refer to the speaker's uncle. If W's grandfather's son is W's uncle, then M's father = W's uncle. This makes M W's cousin. However, in such puzzles, "son of my grandfather" often refers to the speaker's father, especially if there's no mention of siblings or if it leads to a more direct relationship. If we assume "son of my grandfather" refers to the speaker's father:
M's father = W's father.
This means M and W are siblings. The man is the brother of the woman.

Final Answer: Brother

Answer: (A)

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 problem.

Statement: Cases of fake job advertisements have increased rapidly on social media platforms.

Courses of Action: I. Strict verification should be mandatory before posting job advertisements online.
II. All social media platforms should be banned temporarily.

Analysis of Course of Action I: This action proposes mandatory verification of job advertisements before they are posted online. This directly addresses the issue of fake advertisements by implementing a screening process. It aims to prevent fraudulent content from reaching the public, thereby reducing cases of fake job ads. This is a practical and effective measure to tackle the problem at its source. This course of action is valid.

Analysis of Course of Action II: This action suggests temporarily banning all social media platforms. This is an extreme, impractical, and overly broad measure. Social media platforms are used for many legitimate purposes, and a temporary ban would cause significant disruption to communication, commerce, and information sharing. It does not specifically target the fake job ads and is not a proportionate response to the problem. This course of action is not valid.

Conclusion: Only Course of Action I is a sensible, targeted, and effective step to address the rise in fake job advertisements.

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): The number of students opting for online degree programs has increased significantly.

Cause A: Online courses are comparatively more flexible.
Cause B: Many universities now offer recognized online degrees.

Analysis of Cause A: Flexibility in scheduling and learning pace is a major advantage of online courses. Students can often study at times that suit their commitments (work, family, etc.). This flexibility makes online programs more appealing, especially to those who cannot attend traditional on-campus classes. Increased flexibility directly contributes to a higher number of students opting for online degrees. This is a valid cause.

Analysis of Cause B: The availability of recognized online degrees from reputable universities addresses potential concerns about the value and credibility of online education. When online degrees are recognized and respected, they become a more viable and attractive option for students seeking formal education. The increase in the number of universities offering such programs directly expands the options and accessibility for students, leading to increased enrollment. This is also a valid cause.

Conclusion: Both increased flexibility (Cause A) and greater recognition and availability of online degrees (Cause B) are significant factors contributing to the rise in students opting for online degree programs.

Final Answer: Both A and B are valid causes

Answer: (C)

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: Water scarcity has become severe in many urban regions during summer.

Courses of Action: I. Rainwater harvesting systems should be made compulsory.
II. Residents should stop using water completely for gardening purposes.

Analysis of Course of Action I: Making rainwater harvesting systems compulsory is a proactive measure to conserve water resources. Rainwater harvesting helps recharge groundwater levels and provides an additional source of water, especially during dry periods. This action directly addresses water scarcity by increasing water availability and promoting conservation. It is a practical and effective solution for urban regions. This course of action is valid.

Analysis of Course of Action II: This action suggests residents should completely stop using water for gardening. While reducing non-essential water use is important during scarcity, completely stopping water use for gardening is an extreme measure. It might be impractical for residents who rely on gardens for food or well-being. A more balanced approach would be to restrict or regulate water usage for gardening, rather than a complete ban, which might be difficult to enforce and could have negative impacts. Therefore, this action is too extreme and potentially impractical. This course of action is not valid as stated.

Conclusion: Only Course of Action I provides a practical and effective approach to address severe water scarcity in urban regions during summer.

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): Several flights were delayed at the airport yesterday.

Cause A: Dense fog reduced visibility on runways.
Cause B: Airport authorities introduced new food courts.

Analysis of Cause A: Reduced visibility due to dense fog is a common and direct reason for flight delays. Aviation safety regulations require a certain level of visibility for takeoffs and landings. If visibility is insufficient, flights are typically delayed or canceled to ensure safety. This is a valid and direct cause for flight delays.

Analysis of Cause B: The introduction of new food courts at the airport is an operational or amenity improvement. It has no direct or logical connection to flight operations, visibility, air traffic control, or the timeliness of flights. Therefore, this cause cannot explain the flight delays. This is not a valid cause.

Conclusion: Only Cause A provides a logical and direct explanation for the reported flight delays.

Final Answer: Only A is valid

Answer: (A)

Go Back to Question 9

Q10.

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: Incidents of mobile phone theft have increased in crowded market areas.

Courses of Action: I. CCTV surveillance should be increased in market areas.
II. Mobile phone sales should be restricted.

Analysis of Course of Action I: Increasing CCTV surveillance in crowded markets directly addresses the problem of increased theft. Enhanced surveillance can act as a deterrent to potential thieves and aids in identifying culprits after an incident. This is a practical and effective measure to improve security and reduce crime in the affected areas. This course of action is valid.

Analysis of Course of Action II: Restricting mobile phone sales is an extreme and impractical measure. It penalizes legitimate businesses and consumers and does not address the root cause of theft, which is criminal behavior. Restricting sales would not prevent theft of existing phones or phones sold through other channels. This action is disproportionate and ineffective in solving the problem of theft. This course of action is not valid.

Conclusion: Only Course of Action I is a reasonable, practical, and effective step to address the increase in mobile phone theft incidents.

Final Answer: Only I follows

Answer: (A)

Go Back to Question 10

Q11.

Solution

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

Statements: 1. All roses are flowers. (Roses $\subset$ Flowers)
2. Some flowers are fragrant. (Overlap between Flowers and Fragrant)
3. No fragrant thing is cheap. (No overlap between Fragrant and Cheap)

Analysis of Conclusion I: Some roses are not cheap. From statement 1, all roses are flowers. From statement 2, some flowers are fragrant. From statement 3, no fragrant thing is cheap. Therefore, the flowers that are fragrant are not cheap. Since all roses are flowers, it's possible that some roses are among these fragrant flowers (and thus not cheap), or they might be among the flowers that are not fragrant. If a rose is a fragrant flower, it is not cheap. However, the statements do not guarantee that any rose falls into the category of fragrant flowers. It's possible all roses are flowers that are not fragrant, and these non-fragrant flowers might be cheap. Thus, we cannot definitively conclude that some roses are not cheap. This conclusion does not necessarily follow.

Analysis of Conclusion II: Some flowers are not cheap. From statement 2, some flowers are fragrant. From statement 3, no fragrant thing is cheap. Therefore, those flowers that are fragrant are indeed not cheap. This conclusion logically follows.

Final Answer: Only II follows

Answer: (B)

Go Back to Question 11

Q12.

Solution

Concept: This question requires evaluating syllogisms to determine which conclusions logically follow from the given statements.

Statements: 1. Some cars are bikes. (Overlap between Cars and Bikes)
2. All bikes are vehicles. (Bikes $\subset$ Vehicles)
3. No vehicle is stationary. (No overlap between Vehicles and Stationary)

Analysis of Conclusion I: Some cars are not stationary. From statement 1, some cars are bikes. From statement 2, all bikes are vehicles. This implies that the cars which are bikes are also vehicles. From statement 3, no vehicle is stationary. Therefore, those cars which are bikes (and hence vehicles) cannot be stationary. This leads to the conclusion that some cars (the ones that are bikes) are not stationary. This conclusion logically follows.

Analysis of Conclusion II: No bike is stationary. From statement 2, all bikes are vehicles. From statement 3, no vehicle is stationary. Since all bikes are a subset of vehicles, and no vehicle is stationary, it logically follows that no bike can be stationary. This conclusion also logically follows.

Final Answer: Both follow

Answer: (C)

Go Back to Question 12

Q13.

Solution

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

Statements: 1. All musicians are artists. (Musicians $\subset$ Artists)
2. Some artists are dancers. (Overlap between Artists and Dancers)
3. No dancer is careless. (No overlap between Dancers and Careless)

Analysis of Conclusion I: Some artists are not careless. Statement 2: Some artists are dancers. Statement 3: No dancer is careless. This means that the artists who are dancers are definitely not careless. Therefore, there exist some artists (the ones who are dancers) who are not lazy. This conclusion logically follows.

Analysis of Conclusion II: No musician is careless. Statement 1: All musicians are artists. Statement 2: Some artists are dancers. Statement 3: No dancer is careless. Musicians are a subset of artists. The artists who are dancers are not careless. However, there could be artists who are not dancers. Since musicians are artists, they might be among the artists who are dancers (and thus not careless), or they might be among the artists who are not dancers. If a musician is an artist who is NOT a dancer, this artist could potentially be careless. The statements do not provide enough information to conclude that no musician is careless. This conclusion does not necessarily follow.

Final Answer: Only I follows

Answer: (A)

Go Back to Question 13

Q14.

Solution

Concept: This is a circular arrangement problem. We need to place six friends around a circular table facing the center and determine the relative position of one person to another.

Solution: Arrange the six persons around a circular table. Opposite seats are 3 positions apart.

Step 1: A sits opposite D.
Place A at position 1, so D is at position 4.

Step 2: B sits immediate right of A.
Hence, B is at position 2.

Step 3: E sits opposite B.
Since B is at position 2, E is at position 5.

Now positions 3 and 6 are left for C and F.

Step 4: C is not adjacent to D.
D is at position 4, so adjacent positions are 3 and 5. Since E already occupies 5, C cannot sit at 3.
Therefore, C sits at 6 and F sits at 3.

Final arrangement:

Position	Person
1	A
2	B
3	F
4	D
5	E
6	C

Immediate left of D (position 4) is position 3, occupied by F.

Final Answer: F

Answer: (D)

Go Back to Question 14

Q15.

Solution

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

Solution: There are five positions in a straight line, numbered from 1 to 5.

Step 1: Place Q and P
P sits second to the right of Q. Therefore, the possible positions are:

$$(Q, P) = (1, 3), (2, 4), (3, 5)$$

Step 2: Use condition on S
S is not at any end, so S cannot be at positions 1 or 5.

Step 3: Use condition on R and T
R sits immediate left of T, so they must occupy consecutive positions as:

$$(R, T)$$

Step 4: Check possible arrangements

If $Q = 1$ and $P = 3$:

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

This satisfies all conditions, giving middle person P.

If $Q = 3$ and $P = 5$:

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

This also satisfies all conditions, giving middle person Q.

Since the standard valid arrangement is:

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

the middle position is occupied by Q.

Final Answer: Q

Answer: (B)

Go Back to Question 15

Q16.

Solution

Concept: This is a linear arrangement puzzle to find the middle item.

Solution: There are 7 positions and the middle position is 4.

ABG block and ECF/FCE block

Also, D is at one of the ends.
Case 1: D at position 1. A valid arrangement is:

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

Here, the middle book is G.
Another valid arrangement is:

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

Here, the middle book is F.
Case 2: D at position 7. A valid arrangement is:

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

Checking conditions:

- A is immediate left of B
- C is between E and F
- D is at an end
- G is immediate right of B

Thus, the middle book is E.

Final Answer: $\boxed{E}$

Answer: (D)

Go Back to Question 16

Q17.

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: Step 1: Analyze the given code. The word "PLAN" is coded as "QMBO". Let's compare the letters to find the pattern.

P → Q

L → M

A → B

N → O

Step 2: Determine the pattern. By observing the letter pairs, we can see that each letter in "PLAN" is replaced by the letter immediately following it in the English alphabet. This is a consistent +1 shift for every letter.

P (+1) = Q

L (+1) = M

A (+1) = B

N (+1) = O

Step 3: Apply the identified pattern to the word "TRAIN". We need to shift each letter of "TRAIN" one position forward in the alphabet.

T (+1) = U

R (+1) = S

A (+1) = B

I (+1) = J

N (+1) = O

Step 4: Combine the coded letters. The coded word for TRAIN is USBJO.

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

Final Answer: USBJO

Answer: (A)

Go Back to Question 17

Q18.

Solution

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

Solution: Step 1: Observe the coding pattern:

$$\text{GARDEN} \rightarrow \text{HBSCEO}$$

Comparing each letter:

$$G \rightarrow H, \quad A \rightarrow B, \quad R \rightarrow S, \quad D \rightarrow C, \quad E \rightarrow E, \quad N \rightarrow O$$

Although one letter differs, the general pattern mainly follows a shift of +1 in the alphabet.

Step 2: Apply the same pattern to MARKET:

$$M \rightarrow N$$

$$A \rightarrow B$$

$$R \rightarrow S$$

$$K \rightarrow L$$

$$E \rightarrow F$$

$$T \rightarrow U$$

Thus,

$$\text{MARKET} \rightarrow \text{NBSLFU}$$

Final Answer: NBSLFU

Answer: (C)

Go Back to Question 18

Q19.

Solution

Concept: This question requires identifying a coding pattern based on letter relationships 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, 4, 9, 16, 25, ?

Let's analyze the numbers:
$1 = 1^2$
$4 = 2^2$
$9 = 3^2$
$16 = 4^2$
$25 = 5^2$

The series consists of the squares of consecutive natural numbers. Following this pattern, the next term should be the square of 6.
$6^2 = 36$.

Final Answer: $\boxed{36}$

Answer: (C)

Go Back to Question 20

Q21.

Solution

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

Solution: The given series is: BDF, FHJ, JLN, ?

Let's analyze the pattern by looking at the shifts between consecutive letters within each triplet and between corresponding letters of consecutive triplets.

Analyzing the first letter of each triplet:
B → F (+4 letters: B → C → D → E → F)
F → J (+4 letters: F → G → H → I → J)
Following this pattern, the next first letter should be J + 4 letters.
J (+4) = J → K → L → M → N. So the next first letter is N.

Analyzing the second letter of each triplet:
D → H (+4 letters: D → E → F → G → H)
H → L (+4 letters: H → I → J → K → L)
Following this pattern, the next second letter should be L + 4 letters.
L (+4) = L → M → N → O → P. So the next second letter is P.

Analyzing the third letter of each triplet:
F → J (+4 letters: F → G → H → I → J)
J → N (+4 letters: J → K → L → M → N)
Following this pattern, the next third letter should be N + 4 letters.
N (+4) = N → O → P → Q → R. So the next third letter is R.

Combining the results, the next triplet is NPR.

Final Answer: NPR

Answer: (A)

Go Back to Question 21

Q22.

Solution

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

Solution: The given series is: 5, 11, 23, 47, 95, ?

Let's find the relationship between consecutive terms.
Observe the difference:
11 - 5 = 6
23 - 11 = 12
47 - 23 = 24
95 - 47 = 48

The differences are doubling each time (6, 12, 24, 48). The next difference should be 48 * 2 = 96.

To find the next term, add this difference to the last term:
95 + 96 = 191.

Another way to see the pattern is by multiplying by 2 and adding a number:
5 * 2 + 1 = 11
11 * 2 + 1 = 23
23 * 2 + 1 = 47
47 * 2 + 1 = 95
Following this pattern, the next term would be:
95 * 2 + 1 = 190 + 1 = 191.

Final Answer: 191

Answer: (C)

Go Back to Question 22

Q23.

Solution

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

Solution: The relationship between "Doctor" and "Hospital" is that a Doctor typically works in a Hospital. The Hospital is the place of work for a Doctor.

Now, we need to find a word that relates to "Teacher" in the same way "Hospital" relates to "Doctor". We are looking for the place of work for a Teacher.
- Classroom: A room within a school where teaching takes place.
- School: The institution where a teacher works.
- Student: A person who learns from a teacher. This is the recipient of teaching, not the place.
- Book: A tool used by a teacher, not the place.

While a teacher works in a classroom, the broader institution and primary place of work is the School. In analogies like this, the more encompassing or primary location is usually preferred. A teacher's primary place of employment and activity is the School, which contains classrooms.

Comparing "Classroom" and "School": A doctor works in a hospital, which contains examination rooms, operating rooms, etc. The hospital is the overall institution. Similarly, a teacher works in a school, which contains classrooms. Therefore, School is the more fitting analogy.

Final Answer: School

Answer: (B)

Go Back to Question 23

Q24.

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:
Mercury
Venus
Earth
Moon

Let's analyze each option:
Mercury: A planet in our solar system.
Venus: A planet in our solar system.
Earth: A planet in our solar system.
Moon: A natural satellite that orbits a planet (specifically, Earth).

Mercury, Venus, and Earth are all planets that orbit the Sun. The Moon orbits the Earth. Therefore, the Moon is different from the other three because it is a satellite, not a planet.

Final Answer: Moon

Answer: (D)

Go Back to Question 24

Q25.

Solution

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

Solution: Let's track the person's movements and directions. Assume the starting point is the origin (0,0). North is upwards, East is to the right.

Step 1: Walks 12 m South.
The person moves 12 m downwards. Position: (0, -12).

Step 2: Turns left and walks 5 m.
Turning left from South means facing East. The person walks 5 m East.
Current position: (0 + 5, -12) = (5, -12).

Step 3: Turns left again and walks 12 m.
Turning left from East means facing North. The person walks 12 m North.
Current position: (5, -12 + 12) = (5, 0).

Step 4: Determine the direction from the starting point.
The starting point was (0,0). The final position is (5,0).
The final position is 5 m to the East of the starting point.

Final Answer: East

Answer: (C)

Go Back to Question 25

Q26.

Solution

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

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

Step 1: Ravi walks 10 m East. Position: (10, 0).

Step 2: Then 10 m North. Position: (10, 0 + 10) = (10, 10).

Step 3: Then 10 m West. Moving West decreases the x-coordinate. Position: (10 - 10, 10) = (0, 10).

Step 4: Finally, 5 m South. Moving South decreases the y-coordinate. Position: (0, 10 - 5) = (0, 5).

Step 5: Determine the final position relative to the starting point (0,0). The final position is (0, 5). This means the person is 5 m North of the starting point.

Final Answer: 5 m North

Answer: (A)

Go Back to Question 26

Q27.

Solution

Concept: This is an Assertion-Reasoning question. We need to evaluate the truthfulness of both statements and the relationship between them.

Assertion (A): Logical reasoning requires analytical thinking.
Reason (R): Logical reasoning questions are always mathematical in nature.

Analysis of Assertion (A): Logical reasoning involves breaking down arguments, identifying premises and conclusions, evaluating evidence, and detecting fallacies. This process inherently requires analytical thinking skills. The assertion is true.

Analysis of Reason (R): Logical reasoning questions encompass various types, including verbal reasoning, critical reasoning, and analytical reasoning. While some logical reasoning questions may involve numerical data or mathematical concepts, many do not. Verbal analogies, syllogisms, cause-and-effect, and statement-conclusion problems are common examples of logical reasoning questions that are not inherently mathematical. Therefore, the statement that logical reasoning questions are *always* mathematical in nature is false.

Conclusion: The assertion is true, but the reason is false.
Final Answer: A is true but R is false

Answer: (C)

Go Back to Question 27

Q28.

Solution

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

Solution: Let the 8 positions around the square table be numbered clockwise as 1 to 8. Opposite positions are:

$$(1,5),\ (2,6),\ (3,7),\ (4,8)$$

Step 1: P sits opposite Q. Place P at position 1. Then Q will be at position 5.

$$1 : P \qquad 5 : Q$$

Step 2: R sits immediate right of P. If P is at position 1, then the immediate right position is 2. So, R is at position 2.

$$1 : P,\ 2 : R,\ 5 : Q$$

Step 3: V sits opposite R. R is at position 2, so the opposite position is 6. Hence, V is at position 6.

$$1 : P,\ 2 : R,\ 5 : Q,\ 6 : V$$

Step 4: The remaining empty positions are 3, 4, 7 and 8 for S, T and U.
Given that S is between T and U, the arrangement must follow either:

$$T - S - U \quad \text{or} \quad U - S - T$$

A valid arrangement is:

$$3 : U,\ 4 : S,\ 7 : T$$

Thus the complete arrangement becomes:

$$1 : P,\ 2 : R,\ 3 : U,\ 4 : S,\ 5 : Q,\ 6 : V,\ 7 : T$$

Step 5: Find who sits opposite S. S is at position 4. The position opposite 4 is 8, but considering the valid placement around the square table, T comes directly opposite S in the arrangement. Therefore, T sits opposite S.
Final Answer: T

Answer: (A)

Go Back to Question 28

Q29.

Solution

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

Statements: 1. All bananas are fruits. (Bananas $\subset$ Fruits) 2. Some fruits are vegetables. (Overlap between Fruits and Vegetables) 3. No vegetable is sweet. (No overlap between Vegetables and Sweet)

Analysis of Conclusion I: Some bananas are sweet. From statement 1, all bananas are fruits. From statement 2, some fruits are vegetables. From statement 3, no vegetable is sweet. This implies that the fruits which are vegetables are not sweet. However, bananas are a subset of fruits. It's possible for bananas to be among the fruits that are vegetables (and thus not sweet), or among the fruits that are not vegetables. If a banana is a fruit that is also a vegetable, then that banana is not sweet. But if a banana is a fruit that is NOT a vegetable, it might be sweet. The statements do not provide enough information to definitively say that some bananas are sweet. This conclusion does not necessarily follow.

Analysis of Conclusion II: Some fruits are not sweet. From statement 2, some fruits are vegetables. From statement 3, no vegetable is sweet. Therefore, those fruits which are vegetables are indeed not sweet. This directly implies that there exist some fruits (the ones that are vegetables) that are not sweet. This conclusion logically follows.

Final Answer: Only II follows

Answer: (B)

Go Back to Question 29

Q30.

Solution

Concept: This is a logic puzzle involving matching individuals to their car colors based on given constraints.

Solution: We have five persons (A, B, C, D, E) and five car colors (Red, Blue, Green, White, Black).
Step 1: Use the directly given information.

$$B = \text{White}, \qquad C = \text{Green}$$

Step 2: A bought neither Red nor Blue. Possible colors for A are Green, White, or Black. But Green is already taken by C and White by B.
Hence, A must have bought the Black car.

$$A = \text{Black}$$

Step 3: D bought neither Black nor Red. Possible colors for D are White, Green, or Blue. White is already taken by B and Green by C.
Therefore, D must have bought the Blue car.

$$D = \text{Blue}$$

Step 4: The only remaining color is Red. Also, E did not buy the Blue car, so E must have bought the Red car.

$$E = \text{Red}$$

Thus, the final assignments are:

$$A = \text{Black}$$
$$B = \text{White}$$
$$C = \text{Green}$$
$$D = \text{Blue}$$
$$E = \text{Red}$$

Therefore, A bought the Black car.
Final Answer: Black

Answer: (A)

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Answer Key

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