MAT Intelligence and Critical Reasoning Sample Paper-15

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 towards a man, Rohan said: "He is the only son of the sister of my father."

How is the man related to Rohan?

(A) Brother

(B) Cousin

(C) Uncle

(D) Nephew

Q2. A is the father of B. C is the sister of B. D is the mother of C. E is the brother of D.

How is E related to B?

(A) Uncle

(B) Cousin

(C) Grandfather

(D) Brother

Q3. Introducing a girl, Pooja said: "She is the daughter of the wife of my husband's brother."

How is the girl related to Pooja?

(A) Sister

(B) Daughter

(C) Niece

(D) Cousin

Q4. X is the brother of Y. Y is the mother of Z. P is the father of Y. Q is the wife of P.

How is Q related to Z?

(A) Aunt

(B) Grandmother

(C) Mother

(D) Sister

Q5. Pointing towards a photograph, Meera said: "He is the husband of the granddaughter of my mother."

How is the man related to Meera?

(A) Brother

(B) Son

(C) Husband

(D) Grandson

Q6. **Statement:** Cases of food adulteration have increased rapidly in urban areas.

Courses of Action:

I. Conduct regular inspections in food markets.

II. Ban sale of packaged food items completely.

(A) Only I follows

(B) Only II follows

(C) Both I and II follow

(D) Neither I nor II follows

Q7. **Statement:** Many employees are reporting health issues due to long working hours.

Possible Causes:

I. Lack of work-life balance.

II. Excessive workload in offices.

(A) Only I is implicit

(B) Only II is implicit

(C) Both I and II are implicit

(D) Neither I nor II is implicit

Q8. **Statement:** The number of cyber attacks on banking systems has increased significantly.

Courses of Action:

I. Upgrade cybersecurity infrastructure.

II. Stop all online banking services permanently.

(A) Only I follows

(B) Only II follows

(C) Both I and II follow

(D) Neither I nor II follows

Q9. **Statement:** Several students performed poorly in online examinations.

Possible Causes:

I. Poor internet connectivity.

II. Lack of preparation by students.

(A) Only I is implicit

(B) Only II is implicit

(C) Both I and II are implicit

(D) Neither I nor II is implicit

Q10. **Statement:** Road congestion during office hours has increased drastically.

Courses of Action:

I. Promote remote working options.

II. Ban use of private vehicles permanently.

(A) Only I follows

(B) Only II follows

(C) Both I and II follow

(D) Neither I nor II follows

Q11. **Statement:** All poets are thinkers.

Some thinkers are philosophers.

No philosopher is careless.

Conclusion:

I. Some thinkers are not careless.

II. No poet is careless.

(A) Only I follows

(B) Only II follows

(C) Both I and II follow

(D) Neither I nor II follows

Q12. **Statement:** Some cars are electric.

All electric vehicles are expensive.

No expensive vehicle is slow.

Conclusion:

I. Some cars are not slow.

II. All cars are expensive.

(A) Only I follows

(B) Only II follows

(C) Both I and II follow

(D) Neither I nor II follows

Q13. **Statement:** All laptops are electronic devices.
Some electronic devices are portable.
No portable device is cheap.

Conclusion:
I. Some electronic devices are not cheap.
II. No laptop is cheap.

(A) Only I follows

(B) Only II follows

(C) Both I and II follow

(D) Neither I nor II follows

Q14. **Statement:** No student is lazy.
Some athletes are students.
All athletes are disciplined.

Conclusion:
I. Some disciplined people are not lazy.
II. No athlete is lazy.

(A) Only I follows

(B) Only II follows

(C) Both I and II follow

(D) Neither I nor II follows

Q15. Eight persons A, B, C, D, E, F, G and H sit in a row.
A sits second to the left of D.
B sits third to the right of A.
E sits immediately left of H.
C is not at any end.

Who sits fourth from the left end?

(A) A

(B) D

(C) B

(D) Cannot be determined

Q16. Seven friends sit around a circular table facing the centre.

P sits opposite R.

Q sits immediate right of P.

S is between T and U.

Who sits opposite Q?

(A) P

(B) R

(C) T

(D) Cannot be determined

Q17. Five books A, B, C, D and E are arranged vertically.

C is above A but below D.

B is immediately below A.

E is not at the top.

Which book is at the bottom?

(A) A

(B) B

(C) C

(D) E

Q18. Seven students P, Q, R, S, T, U and V stand in a line.

Q stands second to the left of R.

S stands immediate right of P.

T is at one end.

V is not adjacent to R.

Who stands exactly in the middle?

(A) P

(B) Q

(C) R

(D) Cannot be determined

Q19. If "MONKEY" is coded as "NPOLFZ", then "TIGER" is coded as:

(A) UJHFS

(B) UJHFR

(C) VJHFS

(D) UJGFS

Q20. In a certain code language,
"ORANGE" is written as "EGNARO".
How will "MARKET" be written?

(A) TEKRAM

(B) TEKRMA

(C) TKEARM

(D) TKERAM

Q21. If "BOARD" is coded as "CPBSE", then "CHAIR" will be coded as:

(A) DIBJS

(B) DIBIR

(C) EJCJS

(D) DHCJS

Q22. Find the next term in the series:

6, 13, 27, 55, 111, ?

(A) 199

(B) 201

(C) 223

(D) 231

Q23. Find the next term in the series:

C, F, K, R, A, ?

(A) L

(B) M

(C) N

(D) O

Q24. Find the next number in the series:

1, 5, 17, 53, 161, ?

(A) 321

(B) 431

(C) 485

(D) 497

Q25. Choose the odd one out:

(A) Pentagon

(B) Hexagon

(C) Octagon

(D) Sphere

Q26. Choose the odd one out:

(A) Gold

(B) Silver

(C) Copper

(D) Coal

Q27. A person walks 18m North, then 24m East, then 18m South.

How far is the person from the starting point?

(A) 18m

(B) 24m

(C) 30m

(D) 42m

Q28. A man starts facing East.

He turns 135° anticlockwise and then 45° clockwise.

Which direction is he facing now?

(A) North

(B) North-West

(C) South-West

(D) West

Q29. **Assertion (A):** Every square is a rectangle.

Reason (R): Opposite sides of a square are equal and parallel.

(A) Both A and R are true, and R explains A

(B) Both A and R are true, but R does not explain A

(C) A is true, but R is false

(D) A is false, but R is true

Q30. **Statement:** Some dancers are singers.

All singers are artists.

Conclusion:

I. Some dancers are artists.

II. All artists are singers.

(A) Only I follows

(B) Only II follows

(C) Both I and II follow

(D) Neither I nor II follows

Detailed Solutions

Q1.

Solution

Concept: This is a blood relation problem. Such questions are solved by identifying each relation one step at a time and then connecting them logically to determine the final relationship.

Solution: Step 1: Rohan is the speaker. Therefore, the phrase "my father" refers to Rohan's father.

Step 2: "My father's sister" means the sister of Rohan's father. The sister of one's father is called a paternal aunt.
So,

Father's sister = Paternal Aunt

Step 3: The statement further says "the only son of my father's sister". This means the only son of Rohan's paternal aunt.

Step 4: The son of one's paternal aunt is one's cousin. Therefore, the person being referred to is Rohan's cousin.

Final Answer: Cousin

Answer: (B)

Go Back to Question 1

Q2.

Solution

Concept: This is a blood relation problem that requires carefully tracing the family tree based on the given relationships. We start from the known person and build the connections step by step.

Solution: Step 1: Analyze the first statement: "A is the father of B."
This means A → Father of → B.

Step 2: Analyze the second statement: "C is the sister of B."
This means B ↔ Sister of ↔ C. Since C is B's sister, and A is B's father, A is also C's father.

Step 3: Analyze the third statement: "D is the mother of C."
This means C → Mother of → D. Since A is C's father, and D is C's mother, A and D are a couple.

Step 4: Analyze the fourth statement: "E is the brother of D."
This means D ↔ Brother of ↔ E.

Step 5: Determine the relationship between E and B.
We know that D is the mother of B. E is the brother of D. Therefore, E is the brother of B's mother.
The brother of one's mother is their maternal uncle.

Step 6: Conclude the relation.
E is the maternal uncle of B.

Option B (Cousin) would be if E were the brother of A. Option C (Grandfather) would be if E were the father of A or D. Option D (Brother) would be if E were the brother of B.

Final Answer: Uncle

Answer: (A)

Go Back to Question 2

Q3.

Solution

Concept: This is a blood relation problem. We need to break down the statement to understand the lineage. The key is to identify "my husband's brother" first and then work from there.

Solution: Step 1: Identify "my husband". Pooja is speaking, so "my husband" refers to Pooja's husband.
Step 2: Identify "my husband's brother". This is Pooja's brother-in-law.
Step 3: Identify "the wife of my husband's brother". This is Pooja's brother-in-law's wife, which means she is Pooja's sister-in-law.
Step 4: Identify "the daughter of the wife of my husband's brother". This means the daughter of Pooja's sister-in-law. The daughter of one's sibling-in-law is their niece.
Step 5: Conclude the relation. The girl is Pooja's niece.

Option A (Sister) would be if the girl was Pooja's own sister. Option B (Daughter) would be if the girl was Pooja's own daughter. Option D (Cousin) would be if the girl was the daughter of Pooja's uncle or aunt.

Final Answer: Niece

Answer: (C)

Go Back to Question 3

Q4.

Solution

Concept: This problem involves tracing family relationships. We start by establishing the direct lineage and then connect the other individuals based on the given information.

Solution: Step 1: Analyze the first statement: "X is the brother of Y."
This establishes a sibling relationship: X $\leftrightarrow$ Brother of $\leftrightarrow$ Y.

Step 2: Analyze the second statement: "Y is the mother of Z."
This means Y $\rightarrow$ Mother of $\rightarrow$ Z. Combining with Step 1, X is the uncle of Z.

Step 3: Analyze the third statement: "P is the father of Y."
This means P $\rightarrow$ Father of $\rightarrow$ Y. Since Y is the mother of Z, P is the paternal grandfather of Z.

Step 4: Analyze the fourth statement: "Q is the wife of P."
This means P $\leftrightarrow$ Wife of $\leftrightarrow$ Q. Since P is the father of Y, and Y is the mother of Z, Q is the wife of Z's paternal grandfather.

Step 5: Determine the relationship between Q and Z.
The wife of one's paternal grandfather is one's paternal grandmother. Therefore, Q is the grandmother of Z.

Option A (Aunt) would be if Q were the sister of P or Y. Option C (Mother) would be if Q were Y. Option D (Sister) would be if Q were Y's sister, and thus Z's aunt.

Final Answer: Grandmother

Answer: (B)

Go Back to Question 4

Q5.

Solution

Concept: This is a blood relation problem where we need to decipher the relationship from the speaker's perspective. The phrase "my mother" is the starting point for the generational understanding.

Solution: Step 1: Identify the relation mentioned.
Meera says:

"He is the husband of the granddaughter of my mother."

Step 2: Find "the granddaughter of my mother."

The granddaughter of Meera's mother can be:

- Meera's daughter, or
- Meera's niece.

The man is the husband of that granddaughter. Hence, the man could be:

- Meera's son-in-law, or
- Meera's nephew-in-law.

Step 3: Match with the given options.

Among the given options, the relation that fits is:

Son

Answer: (B)

Go Back to Question 5

Q6.

Solution

Concept: This question asks to evaluate the suitability of proposed courses of action to address a given statement. A course of action is considered valid if it is a logical, practical, and effective step to tackle the problem.

Statement: Cases of food adulteration have increased rapidly in urban areas.

Courses of Action:
I. Conduct regular inspections in food markets.
II. Ban sale of packaged food items completely.

Analysis of Course of Action I:
Conducting regular inspections in food markets is a direct and practical measure to detect and prevent food adulteration. It allows authorities to identify adulterated products, take corrective actions, and deter future malpractices. This course of action logically addresses the problem.

Analysis of Course of Action II:
Banning the sale of packaged food items completely is an extreme and impractical measure. It would not only disrupt the supply chain and affect businesses but also inconvenience consumers. Food adulteration can occur in non-packaged items as well, so a complete ban is not a targeted or effective solution. Moreover, it's an overly drastic step for the problem described.

Conclusion: Only Course of Action I is a logical and effective step to address the increasing cases of food adulteration.

Final Answer: Only I follows

Answer: (A)

Go Back to Question 6

Q7.

Solution

Concept: This question asks to identify possible causes for a given statement. A cause is something that can reasonably lead to the stated effect or situation.

Statement: Many employees are reporting health issues due to long working hours.

Possible Causes:
I. Lack of work-life balance.
II. Excessive workload in offices.

Analysis of Possible Cause I:
Lack of work-life balance is directly associated with long working hours. When employees work for extended periods, their personal lives and rest are often compromised, leading to stress, burnout, and various health issues. Therefore, a lack of work-life balance can be a cause for health issues reported due to long working hours.

Analysis of Possible Cause II:
Excessive workload in offices often necessitates long working hours. A high volume of tasks or demanding projects can push employees to work beyond standard hours to complete them. This prolonged effort can lead to physical and mental strain, contributing to health problems. Thus, excessive workload is a plausible cause for the situation described.

Conclusion: Both identified factors, lack of work-life balance and excessive workload, are direct contributors or related causes that can lead to employees reporting health issues due to long working hours.

Final Answer: Both I and II are implicit

Answer: (C)

Go Back to Question 7

Q8.

Solution

Concept: This question requires evaluating proposed courses of action to mitigate a problem described in a statement. A valid course of action should be practical, logical, and effective in addressing the issue.

Statement: The number of cyber attacks on banking systems has increased significantly.

Courses of Action:
I. Upgrade cybersecurity infrastructure.
II. Stop all online banking services permanently.

Analysis of Course of Action I:
Upgrading cybersecurity infrastructure is a proactive and logical step to counter the increasing cyber attacks. Enhanced security measures, such as advanced firewalls, intrusion detection systems, and encryption, can significantly reduce the vulnerability of banking systems to attacks. This action directly addresses the root of the problem.

Analysis of Course of Action II:
Stopping all online banking services permanently is an extreme and impractical reaction. While it would eliminate cyber threats to online services, it would cripple the banking sector, severely inconvenience customers, and likely lead to significant economic disruption. This is not a feasible or proportionate solution to the problem of increased cyber attacks.

Conclusion: Only Course of Action I is a sensible and effective measure to deal with the rise in cyber attacks on banking systems.

Final Answer: Only I follows

Answer: (A)

Go Back to Question 8

Q9.

Solution

Concept: This question asks to identify plausible causes for a given statement. A cause is a factor that can logically explain why the situation described in the statement might have occurred.

Statement: Several students performed poorly in online examinations.

Possible Causes:
I. Poor internet connectivity.
II. Lack of preparation by students.

Analysis of Possible Cause I:
Poor internet connectivity is a significant factor that can negatively impact performance in online examinations. Unstable connections can lead to disruptions during exams, inability to submit answers, or loss of access to exam materials, all of which can result in poor performance. Therefore, this is a plausible cause.

Analysis of Possible Cause II:
Lack of preparation by students is a fundamental reason for poor academic performance in any examination, including online ones. If students have not studied adequately or are not familiar with the material, they are likely to perform poorly. This is a direct and common cause for such outcomes.

Conclusion: Both poor internet connectivity and lack of preparation are valid and common reasons why students might perform poorly in online examinations.

Final Answer: Both I and II are implicit

Answer: (C)

Go Back to Question 9

Q10.

Solution

Concept: This question involves assessing proposed courses of action in response to a problem described in a statement. A course of action is valid if it is a practical, logical, and effective solution.

Statement: Road congestion during office hours has increased drastically.

Courses of Action:
I. Promote remote working options.
II. Ban use of private vehicles permanently.

Analysis of Course of Action I:
Promoting remote working options is a practical and effective way to reduce road congestion. If more employees can work from home, the number of vehicles on the road during peak office hours will decrease, thus alleviating congestion. This action directly addresses the problem by reducing the volume of traffic.

Analysis of Course of Action II:
Permanently banning the use of private vehicles is an extreme and impractical solution. It would cause immense disruption to people's daily lives, impact businesses reliant on transportation, and is unlikely to be feasible or acceptable in most societies. While it would reduce congestion, it is not a proportionate or realistic response.

Conclusion: Only Course of Action I is a reasonable and effective measure to address the drastic increase in road congestion during office hours.

Final Answer: Only I follows

Answer: (A)

Go Back to Question 10

Q11.

Solution

Concept: This is a syllogism problem that involves analyzing statements and drawing logical conclusions. We use Venn diagrams or logical reasoning to determine which conclusions necessarily follow from the given premises.

Statements: 1. All poets are thinkers. (All P are T)
2. Some thinkers are philosophers. (Some T are Ph)
3. No philosopher is careless. (No Ph is C)

Analysis of Conclusion I: Some thinkers are not careless.
From statement 2, we know that some thinkers are philosophers (Some T are Ph).
From statement 3, we know that no philosopher is careless (No Ph is C).
This means that the thinkers who are philosophers are also not careless. Therefore, some thinkers (those who are philosophers) are not careless.
Conclusion I follows.

Analysis of Conclusion II: No poet is careless.
From statement 1, all poets are thinkers (All P are T).
From statement 2, some thinkers are philosophers (Some T are Ph).
From statement 3, no philosopher is careless (No Ph is C).

We know that all poets are thinkers. Some thinkers are philosophers, and these thinkers (philosophers) are not careless. However, we do not know if any poets fall into the category of thinkers who are also philosophers. It is possible that poets are thinkers who are not philosophers. If a poet is a thinker but not a philosopher, then we cannot conclude they are not careless, as the 'careless' property is only excluded for philosophers.
We cannot definitively say that no poet is careless. For example, poets could be thinkers who are careless, as long as they are not philosophers.
Conclusion II does not necessarily follow.

Final Answer: Only I follows

Answer: (A)

Go Back to Question 11

Q12.

Solution

Concept: This is a syllogism problem. We analyze the given statements to determine which of the conclusions logically follow. We can use Venn diagrams or step-by-step logical deduction.

Statements: 1. Some cars are electric. (Some C are E)
2. All electric vehicles are expensive. (All E are Ex)
3. No expensive vehicle is slow. (No Ex is S)

Analysis of Conclusion I: Some cars are not slow.
From statement 1, we know that some cars are electric (Some C are E).
From statement 2, all electric vehicles are expensive (All E are Ex). This implies that the cars which are electric are also expensive. So, some cars are expensive (Some C are Ex).
From statement 3, no expensive vehicle is slow (No Ex is S). This means that anything that is expensive is not slow.
Since we have established that some cars are expensive, and all expensive things are not slow, it logically follows that some cars are not slow.
Conclusion I follows.

Analysis of Conclusion II: All cars are expensive.
Statement 1 says "Some cars are electric." This directly implies that not all cars are necessarily electric. Statement 2 says "All electric vehicles are expensive." This means if a car is electric, then it is expensive. However, if a car is not electric, we cannot conclude anything about its expense from these statements.
Since we know not all cars are electric, we cannot conclude that all cars are expensive. Conclusion II does not follow.

Final Answer: Only I follows

Answer: (A)

Go Back to Question 12

Q13.

Solution

Concept: This problem involves syllogisms, where we draw conclusions from given premises. We can use logical reasoning or Venn diagrams to solve it.

Statements: 1. All laptops are electronic devices. (All L are E)
2. Some electronic devices are portable. (Some E are P)
3. No portable device is cheap. (No P is C)

Analysis of Conclusion I: Some electronic devices are not cheap.
From statement 2, we know that some electronic devices are portable (Some E are P).
From statement 3, we know that no portable device is cheap (No P is C).
This means that the electronic devices which are portable are also not cheap. Therefore, some electronic devices (those that are portable) are not cheap.
Conclusion I follows.

Analysis of Conclusion II: No laptop is cheap.
From statement 1, all laptops are electronic devices (All L are E).
From statement 2, some electronic devices are portable (Some E are P).
From statement 3, no portable device is cheap (No P is C).

We know that all laptops are electronic devices. Some electronic devices are portable, and these portable devices are not cheap. However, we don't know if laptops fall into the category of electronic devices that are also portable. It's possible that laptops are electronic devices that are not portable. If a laptop is an electronic device but not portable, then we cannot conclude it is not cheap, as the 'cheap' property is only excluded for portable devices.
Conclusion II does not necessarily follow.

Final Answer: Only I follows

Answer: (A)

Go Back to Question 13

Q14.

Solution

Concept: This is a syllogism problem. We need to determine which conclusions logically follow from the given statements. We can use Venn diagrams or logical deduction.

Statements: 1. No student is lazy. (No S is L)
2. Some athletes are students. (Some A are S)
3. All athletes are disciplined. (All A are D)

Analysis of Conclusion I: Some disciplined people are not lazy.
From statement 2, some athletes are students (Some A are S).
From statement 1, no student is lazy (No S is L).
This means that the athletes who are students are also not lazy. So, some athletes are not lazy.
From statement 3, all athletes are disciplined (All A are D).
Since some athletes are not lazy, and all athletes are disciplined, it follows that some disciplined people (those athletes who are not lazy) are not lazy.
Conclusion I follows.

Analysis of Conclusion II: No athlete is lazy.
From statement 2, we know that some athletes are students (Some A are S).
From statement 1, we know that no student is lazy (No S is L).
This implies that the athletes who are students are definitely not lazy.
However, statement 2 only says "Some athletes are students." This implies that there might be other athletes who are not students. We have no information about whether these non-student athletes are lazy or not. Therefore, we cannot conclude that no athlete is lazy.
Conclusion II does not necessarily follow.

Final Answer: Only I follows

Answer: (A)

Go Back to Question 14

Q15.

Solution

Concept: This is a linear arrangement problem. We need to deduce the positions of eight persons based on the given clues to determine who sits fourth from the left.

Solution: From the clues:

$$A\_DB$$

since A sits second to the left of D and B sits third to the right of A.
Also,

$$EH$$

must sit together, and C cannot sit at either end.
One possible arrangement is:

$$F \quad A \quad C \quad D \quad B \quad E \quad H \quad G$$

Here, the 4th person from the left is D.
Another possible arrangement is:

$$A \quad C \quad D \quad B \quad E \quad H \quad F \quad G$$

Here, the 4th person from the left is B.
Since different valid arrangements give different answers, the position cannot be uniquely determined.

Final Answer: Cannot be determined

Answer: (D)

Go Back to Question 15

Q16.

Solution

Concept: This is a circular arrangement problem. We need to arrange seven friends around a table based on the given clues and then determine who sits opposite a specific person.

Clues:

1. Seven friends sit around a circular table facing the centre.
2. P sits opposite R.
3. Q sits immediate right of P.
4. S is between T and U.

Deductions:

Let the seats be numbered 1 to 7 clockwise. If P is at seat 1, R is opposite P at seat 4.
If P is at seat 1, Q is to its immediate right (facing center), so Q is at seat 2.
Current arrangement: Seat 1: P, Seat 2: Q, Seat 4: R.
Remaining seats: 3, 5, 6, 7.
Remaining people: S, T, U, and one unnamed friend (let's call them V).
Clue 4: S is between T and U. This implies a consecutive block T S U or U S T.
The only consecutive available seats are 5, 6, 7.
So, T, S, U occupy seats 5, 6, 7. V occupies seat 3.

Case 1: T=5, S=6, U=7. V=3.
Arrangement: P(1), Q(2), V(3), R(4), T(5), S(6), U(7).
Opposite Q (seat 2) is seat 5. Seat 5 is T.

Case 2: U=5, S=6, T=7. V=3.
Arrangement: P(1), Q(2), V(3), R(4), U(5), S(6), T(7).
Opposite Q (seat 2) is seat 5. Seat 5 is U.

Since the person opposite Q can be either T or U, the answer cannot be definitively determined.

Final Answer: Cannot be determined

Answer: (D)

Go Back to Question 16

Q17.

Solution

Concept: This is a vertical arrangement problem. We need to stack the five books based on the given relative positions to determine which book is at the bottom.

Solution: From the clues:

$$D > C > A$$

and B is immediately below A, so:

$$D > C > AB$$

Since E is not at the top, D must be at the top.

Possible valid arrangements are:

$$D \quad C \quad A \quad B \quad E$$

or

$$D \quad C \quad E \quad A \quad B$$

In the first arrangement, the bottom book is E.
In the second arrangement, the bottom book is B.

Thus, the bottom book cannot be uniquely determined from the given information.

Final Answer: Cannot be determined

Answer: (D)

Go Back to Question 17

Q18.

Solution

Concept: This is a linear arrangement problem. We need to arrange seven students in a line based on the given clues and then determine who is in the middle position.

Solution: From the clues:

$$Q\_R$$

since Q stands second to the left of R.
Also,

$$PS$$

must sit together, T is at one end, and V is not adjacent to R.
One valid arrangement is:

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

Checking the conditions:

- Q is second left of R,
- S is immediately right of P,
- T is at an end,
- V is not adjacent to R.

Here, the middle position (4th position) is occupied by R.

Final Answer: R

Answer: (C)

Go Back to Question 18

Q19.

Solution

Concept: This is a coding-decoding problem based on letter shifts. We need to identify the pattern of transformation from the given coded word and apply it to the target word.

Given Code: MONKEY is coded as NPOLFZ.
Analysis of the Code:
Let's compare the letters of MONKEY with NPOLFZ position by position:
M → N
O → P
N → O
K → L
E → F
Y → Z

We can observe that each letter in "MONKEY" is replaced by the very next letter in the English alphabet. This is a +1 shift for each letter.
M (+1) = N
O (+1) = P
N (+1) = O
K (+1) = L
E (+1) = F
Y (+1) = Z

Applying the Code to "TIGER":
Now, we apply the same +1 shift to each letter of the word "TIGER":
T (+1) = U
I (+1) = J
G (+1) = H
E (+1) = F
R (+1) = S
Combining these shifted letters, we get the code for "TIGER" as UJHFS.

Let's check the options:
A. UJHFS
B. UJHFR
C. VJHFS
D. UJGFS
Our derived code matches option A.

Final Answer: UJHFS

Answer: (A)

Go Back to Question 19

Q20.

Solution

Concept: This is a coding-decoding problem where the transformation is based on reversing the order of letters in the word.

Solution: Given:

$$\text{ORANGE} \rightarrow \text{EGNARO}$$

Let us compare the word and its code:

$$\text{O R A N G E}$$

$$\text{E G N A R O}$$

We observe that the letters are written in the reverse order. The last letter becomes the first, the second last becomes the second, and so on.

Now apply the same pattern to the word MARKET:

$$\text{M A R K E T}$$

Reversing the order of the letters:

$$\text{T E K R A M}$$

Thus, the coded form of MARKET is:

$$\boxed{\text{TEKRAM}}$$

Answer: (A)

Go Back to Question 20

Q21.

Solution

Concept: This is a coding-decoding problem. We need to identify the pattern of letter transformation from the given example and apply it to the new word.

Given Code:
BOARD is coded as CPBSE.
Analysis of the Code:
Let's compare the letters of BOARD with CPBSE position by position:
B → C
O → P
A → B
R → S
D → E
We can observe that each letter in "BOARD" is replaced by the very next letter in the English alphabet. This is a +1 shift for each letter.
B (+1) = C
O (+1) = P
A (+1) = B
R (+1) = S
D (+1) = E

Applying the Code to "CHAIR":
Now, we apply the same +1 shift to each letter of the word "CHAIR":
C (+1) = D
H (+1) = I
A (+1) = B
I (+1) = J
R (+1) = S
Combining these shifted letters, we get the code for "CHAIR" as DIBJS.

Let's check the options:
A. DIBJS
B. DIBIR
C. EJCJS
D. DHCJS
Our derived code matches option A.

Final Answer: DIBJS

Answer: (A)

Go Back to Question 21

Q22.

Solution

Concept: This is a number series problem. We need to identify the pattern or rule that generates the terms in the sequence and use it to find the next term.

Series:
6, 13, 27, 55, 111, ?
Analysis of the Series:
Let's look at the difference between consecutive terms:
13 - 6 = 7
27 - 13 = 14
55 - 27 = 28
111 - 55 = 56
The differences are 7, 14, 28, 56. We can see that each difference is double the previous difference (7 x 2 = 14, 14 x 2 = 28, 28 x 2 = 56).
This suggests a pattern where the next difference will be 56 x 2 = 112.
So, the next term in the series would be 111 + 112 = 223.

Alternatively, let's examine another possible pattern.
Multiply the previous term by 2 and add a number.
6 x 2 + 1 = 12 + 1 = 13
13 x 2 + 1 = 26 + 1 = 27
27 x 2 + 1 = 54 + 1 = 55
55 x 2 + 1 = 110 + 1 = 111

The pattern is: current term = (previous term x 2) + 1.
To find the next term, we apply this rule to the last term (111):
Next term = (111 x 2) + 1
Next term = 222 + 1
Next term = 223.

Let's check the options:
A. 199
B. 201
C. 223
D. 231
The calculated next term is 223, which matches option C.

Final Answer: 223

Answer: (C)

Go Back to Question 22

Q23.

Solution

Concept: This is a letter series problem. We need to find the pattern in the sequence of letters and determine the next letter. The pattern often involves the position of letters in the alphabet and the difference between their positions.

Solution:

Series:

$$C,\ F,\ K,\ R,\ A,\ ?$$

Step 1: Convert the letters into their alphabetical positions.

$$C = 3, \quad F = 6, \quad K = 11, \quad R = 18, \quad A = 1$$

Step 2: Find the differences.

$$6 - 3 = 3$$

$$11 - 6 = 5$$

$$18 - 11 = 7$$

The differences are:

$$3,\ 5,\ 7,\ 9$$

So, the next difference should be:

$$11$$

Step 3: Apply the pattern.

From $R(18)$:

$$18 + 9 = 27$$

Since the alphabet has 26 letters:

$$27 - 26 = 1$$

Hence, the next letter is A.

Now add 11 to $A(1)$:

$$1 + 11 = 12$$

The 12th letter is:

$$L$$

Final Answer: L

Answer: (A)

Go Back to Question 23

Q24.

Solution

Concept: This is a number series problem. We need to find the pattern governing the sequence and use it to predict the next term.

Series: 1, 5, 17, 53, 161, ?
Analysis of the Series: Let's examine the relationship between consecutive terms.
Consider the operation: (previous term x 3) + a number.
1 x 3 + 2 = 3 + 2 = 5
5 x 3 + 2 = 15 + 2 = 17
17 x 3 + 2 = 51 + 2 = 53
53 x 3 + 2 = 159 + 2 = 161

The pattern is: current term = (previous term x 3) + 2.
Let's verify this pattern.
1st term = 1
2nd term = (1 x 3) + 2 = 5
3rd term = (5 x 3) + 2 = 17
4th term = (17 x 3) + 2 = 53
5th term = (53 x 3) + 2 = 161

To find the next term (6th term), we apply the same rule:
Next term = (161 x 3) + 2
Next term = 483 + 2
Next term = 485.

Let's check the options:
A. 321
B. 431
C. 485
D. 497
The calculated next term is 485, which matches option C.

Final Answer: 485

Answer: (C)

Go Back to Question 24

Q25.

Solution

Concept: This question asks us to identify the odd one out from a given list of items. We need to find a common characteristic shared by most items and identify the one that does not fit this characteristic.

Options:
A. Pentagon
B. Hexagon
C. Octagon
D. Sphere

Analysis:
Let's consider the geometric properties of each option:
A. Pentagon: A polygon with 5 sides. It is a 2-dimensional shape.
B. Hexagon: A polygon with 6 sides. It is a 2-dimensional shape.
C. Octagon: A polygon with 8 sides. It is a 2-dimensional shape.

D. Sphere: A 3-dimensional object that is perfectly round. It does not have sides or vertices in the same way polygons do.

The first three options (Pentagon, Hexagon, Octagon) are all polygons, which are 2-dimensional geometric figures defined by straight line segments.
A Sphere is a 3-dimensional geometric object.

Therefore, Sphere is the odd one out.

Final Answer: Sphere

Answer: (D)

Go Back to Question 25

Q26.

Solution

Concept: This question asks us to identify the odd one out from a list of materials. We need to find a category or property that unites most of the items, and then find the item that doesn't belong to that category.

Options:
A. Gold
B. Silver
C. Copper
D. Coal

Analysis:
Let's examine the nature of each item:
A. Gold: A precious metal. It is a chemical element (Au). Metals are generally good conductors of electricity and heat.
B. Silver: A precious metal. It is a chemical element (Ag). Metals are generally good conductors of electricity and heat.
C. Copper: A metal. It is a chemical element (Cu). Metals are generally good conductors of electricity and heat.

D. Coal: A combustible black or brownish-black sedimentary rock, formed as rock strata called coal seams. It is primarily composed of carbon, along with variable quantities of other elements, chiefly hydrogen, sulfur, oxygen, and nitrogen. Coal is a non-metal and is generally an insulator, not a conductor. It is used as a fuel.

Gold, Silver, and Copper are all metals. Metals share common properties like conductivity, malleability, and ductility.
Coal is a non-metal, specifically a fossil fuel, and does not share these metallic properties.

Therefore, Coal is the odd one out.

Final Answer: Coal

Answer: (D)

Go Back to Question 26

Q27.

Solution

Concept: This problem involves calculating the displacement of a person from their starting point after a series of movements in different directions. We can use the Pythagorean theorem or visualize the path on a coordinate plane.

Movement Steps:

1. The person walks 18m North.
2. Then walks 24m East.
3. Then walks 18m South.

Visualization and Calculation:

Imagine a coordinate plane where the starting point is the origin (0,0).

- Walking 18m North means moving 18 units up on the y-axis. The position becomes (0, 18).
- Walking 24m East means moving 24 units right on the x-axis. The position becomes (0 + 24, 18) = (24, 18).
- Walking 18m South means moving 18 units down on the y-axis. The position becomes (24, 18 - 18) = (24, 0).

The final position of the person is (24, 0).
The starting point was (0, 0).

We need to find the distance between the starting point (0, 0) and the final point (24, 0).
This distance is the horizontal distance along the x-axis.
Distance = $\sqrt{(x\_2 - x\_1)^2 + (y\_2 - y\_1)^2}$
Distance = $\sqrt{(24 - 0)^2 + (0 - 0)^2}$
Distance = $\sqrt{(24)^2 + (0)^2}$
Distance = $\sqrt{576}$
Distance = 24 meters.

Alternatively, consider the movements:
The 18m North movement is exactly cancelled out by the 18m South movement in terms of the North-South displacement. The person ends up at the same North-South level as they started.
The only displacement that remains is the 24m East movement.
Therefore, the person is 24m East of their starting point.

Final Answer: 24m

Answer: (B)

Go Back to Question 27

Q28.

Solution

Concept: This problem involves calculating the final direction a person is facing after a series of turns. We can use a compass rose or visualize the directions and angles.

Solution: Starting Direction:
The man starts facing East.

Step 1: Turn 135° **anticlockwise.**
From East:

- 90° anticlockwise leads to North.
- Another 45° anticlockwise leads to North-West.

So, after the first turn, he faces:

North-West

Step 2: Turn 45° **clockwise.**
Turning 45° clockwise from North-West brings him to:

North

Verification using degrees:
Taking North as 0°:

$$\text{East} = 90^\circ$$

After turning 135° anticlockwise:

$$90^\circ - 135^\circ = -45^\circ = 315^\circ$$

315° represents North-West.
Now turning 45° clockwise:

$$315^\circ + 45^\circ = 360^\circ$$

$$360^\circ = 0^\circ = \text{North}$$

Therefore, the man is finally facing:

$$\boxed{\text{North}}$$

Answer: (A)

Go Back to Question 28

Q29.

Solution

Concept: This question assesses understanding of geometric definitions and logical reasoning. We need to evaluate both the assertion and the reason, and their relationship.

Assertion (A): Every square is a rectangle.
- A rectangle is defined as a quadrilateral with four right angles.
- A square is a quadrilateral with four equal sides and four right angles.
- Since a square has four right angles, it meets the definition of a rectangle. Assertion (A) is true.

Reason (R): Opposite sides of a square are equal and parallel.
- This statement correctly describes properties of a square. Squares have equal and parallel opposite sides. - These properties are also characteristic of rectangles.

Relationship between A and R:
While both the assertion and the reason are true statements about squares, the reason provided does not fully explain *why* a square is a rectangle. The defining characteristic of a rectangle is having four right angles. A square has four right angles, which is why it is a rectangle. The reason given (opposite sides are equal and parallel) is a property shared by squares and rectangles, but it's not the sole explanation for a square being classified as a rectangle. The reason highlights shared properties rather than the defining characteristic (four right angles) that makes a square fit the definition of a rectangle.

Therefore, both statements are true, but the reason does not adequately explain the assertion.

Final Answer: Both A and R are true, but R does not explain A

Answer: (B)

Go Back to Question 29

Q30.

Solution

Concept: This is a syllogism problem involving categorical propositions. We need to analyze the given statements and determine which conclusions logically follow. We can use Venn diagrams or step-by-step logical deduction.

Statements: 1. Some dancers are singers. (Some D are S)
2. All singers are artists. (All S are A)

Analysis of Conclusion I: Some dancers are artists.
From statement 1, we know that there is an overlap between the set of dancers and the set of singers. Let's call this overlapping group 'X'. So, some dancers are singers, and these dancers are part of group X.
From statement 2, all singers are artists. This means that everyone in the set of singers is also in the set of artists.
Since group X consists of singers (and also dancers), and all singers are artists, it follows that the members of group X are also artists.
Therefore, the dancers who are part of group X (who are singers) are also artists. This means some dancers are artists.
Conclusion I follows.

Analysis of Conclusion II: All artists are singers.
Statement 2 says "All singers are artists." This means the set of singers is a subset of the set of artists. However, it does not state that the set of artists is a subset of the set of singers.
It is possible for there to be artists who are not singers. For example, painters, musicians (who are not singers), sculptors, etc., are artists but not necessarily singers.
The statement "All singers are artists" does not imply "All artists are singers."
Conclusion II does not follow.

Final Answer: Only I follows

Answer: (A)

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Answer Key

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