MAT Intelligence and Critical Reasoning Sample Paper-19

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 woman, Aditya said: "She is the daughter of the only son of my grandfather."

How is the woman related to Aditya?

(A) Sister

(B) Cousin

(C) Aunt

(D) Niece

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

How is E related to A?

(A) Aunt

(B) Grandmother

(C) Great Aunt

(D) Cousin

Q3. Introducing a man, Neha said: "He is the husband of the daughter of my mother's brother."

How is the man related to Neha?

(A) Cousin

(B) Brother

(C) Brother-in-law

(D) Uncle

Q4. P is the father of Q. R is the sister of Q. S is the mother of P. T is the husband of S.

How is T related to R?

(A) Grandfather

(B) Uncle

(C) Father

(D) Brother

Q5. Pointing to a boy, Kunal said: "He is the son of the only daughter of my grandmother."

How is the boy related to Kunal?

(A) Brother

(B) Cousin

(C) Nephew

(D) Son

Q6. **Statement:** The number of road accidents caused by drunk driving has increased rapidly.

Courses of Action:

I. Conduct frequent alcohol testing on highways.

II. Ban all night-time travel permanently.

(A) Only I follows

(B) Only II follows

(C) Both I and II follow

(D) Neither I nor II follows

Q7. **Statement:** The demand for online learning platforms has increased sharply.

Possible Causes:

I. Availability of affordable internet services.

II. Flexibility offered by online education.

(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:** Several cities are facing severe traffic congestion during peak hours.

Courses of Action:

I. Improve public transportation facilities.

II. Ban ownership of private vehicles completely.

(A) Only I follows

(B) Only II follows

(C) Both I and II follow

(D) Neither I nor II follows

Q9. **Statement:** Many banks are encouraging customers to use digital payment systems.

Possible Causes:

I. Increase in smartphone usage.

II. Reduction in physical cash transactions.

(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:** Cases of identity theft on social media have increased significantly.

Courses of Action:

I. Educate users about online privacy measures.

II. Shut down all social networking websites.

(A) Only I follows

(B) Only II follows

(C) Both I and II follow

(D) Neither I nor II follows

Q11. **Statement:** All fruits are healthy.

Some healthy things are expensive.

No expensive thing is artificial.

Conclusion:

I. Some healthy things are not artificial.

II. No fruit is artificial.

(A) Only I follows

(B) Only II follows

(C) Both I and II follow

(D) Neither I nor II follows

Q12. **Statement:** Some students are athletes.

All athletes are disciplined.

No disciplined person is careless.

Conclusion:

I. Some students are not careless.

II. All students are disciplined.

(A) Only I follows

(B) Only II follows

(C) Both I and II follow

(D) Neither I nor II follows

Q13. **Statement:** All scientists are intelligent.
Some intelligent people are writers.
No writer is arrogant.

Conclusion:
I. Some intelligent people are not arrogant.
II. No scientist is arrogant.

(A) Only I follows
(B) Only II follows
(C) Both I and II follow
(D) Neither I nor II follows

Q14. **Statement:** No car is electric.
Some electric vehicles are expensive.
All expensive vehicles are luxurious.

Conclusion:
I. Some luxurious vehicles are electric.
II. No car is luxurious.

(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 facing North.
A sits third to the left of E.
B sits second to the right of A.
D sits immediately left of F.
C is not at any end.

Who sits fourth from the right end?

(A) A
(B) B

(C) E

(D) Cannot be determined

Q16. Seven friends P, Q, R, S, T, U and V sit around a circular table facing the centre.
P sits second to the right of Q.
R sits opposite T.
S sits immediate left of P.
U is not adjacent to R.

Who sits opposite P?

(A) Q

(B) R

(C) V

(D) Cannot be determined

Q17. Six books A, B, C, D, E and F are arranged vertically.
A is above D but below C.
B is immediately below E.
F is not at the bottom.
D is not at the top.

Which book is at the bottom?

(A) A

(B) B

(C) D

(D) Cannot be determined

Q18. Seven students P, Q, R, S, T, U and V stand in a queue.
Q stands second to the right of S.
R stands immediately left of P.
V is at one end.
T is not adjacent to Q.

Who stands exactly in the middle?

(A) P

(B) Q

(C) S

(D) Cannot be determined

Q19. If "DOCTOR" is coded as "EPDUPS", then "MARKET" will be coded as:

(A) NBSLFU

(B) NCSLFU

(C) NBTLFU

(D) OBSLGV

Q20. In a certain code language,
"SILVER" is written as "REVLIS".
How will "GARDEN" be written?

(A) NEDRAG

(B) NERDAG

(C) NEDARG

(D) NERAGD

Q21. If "CANDLE" is coded as "DBOEMF", then "MARKER" will be coded as:

(A) NBSLFS

(B) NBSLGR

(C) NBTLFS

(D) OBSLFS

Q22. Find the next term in the series:

7, 15, 31, 63, 127, ?

(A) 191

(B) 223

(C) 255

(D) 257

Q23. Find the next term in the series:

E, J, O, T, Y, ?

(A) C

(B) D

(C) E

(D) F

Q24. Find the next number in the series:

4, 13, 40, 121, 364, ?

(A) 729

(B) 981

(C) 1093

(D) 1456

Q25. Choose the odd one out:

(A) Triangle

(B) Square

(C) Circle

(D) Pentagon

Q26. Choose the odd one out:

(A) Iron

(B) Copper

(C) Silver

(D) Wood

Q27. A person walks 20m North, then 21m East, then 20m South.

How far is the person from the starting point?

(A) 20m

(B) 21m

(C) 29m

(D) 41m

Q28. A man starts facing West.

He turns 135° clockwise and then 45° anticlockwise.

Which direction is he facing now?

(A) North

(B) South

(C) South-West

(D) North-West

Q29. **Assertion (A):** Every rhombus is a parallelogram.

Reason (R): Opposite sides of a rhombus are 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 engineers are managers.

All managers are educated.

Conclusion:

I. Some engineers are educated.

II. All educated people are managers.

(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. We need to trace the relationship described by Aditya by breaking down the statement step-by-step.

Solution: Step 1: Aditya is speaking. He refers to "my grandfather".
Step 2: "The only son of my grandfather" refers to Aditya's father (assuming Aditya has no brothers, or even if he does, his father is the son of his grandfather).
Step 3: "The daughter of the only son of my grandfather" means the daughter of Aditya's father.
Step 4: The daughter of one's father is one's sister.

Final Answer: Sister

Answer: (A)

Go Back to Question 1

Q2.

Solution

Concept: This is a blood relation problem. We need to trace the relationships given to determine the connection between E and A.

Solution: Step 1: "A is the brother of B." (A ↔ B)
Step 2: "C is the mother of B." (C → Mother of → B). Since A is B's brother, C is also A's mother.
Step 3: "D is the father of C." (D → Father of → C). Since C is A's mother, D is A's maternal grandfather.
Step 4: "E is the sister of D." (E ↔ Sister of ↔ D). Since D is A's maternal grandfather, E is the sister of A's maternal grandfather.
Step 5: The sister of one's maternal grandfather is one's great aunt.

Final Answer: Great Aunt

Answer: (C)

Go Back to Question 2

Q3.

Solution

Concept: This is a blood relation problem. We need to break down the statement made by Neha to understand the relationship of the man to her.

Solution: Step 1: Neha is speaking. "My mother's brother" is Neha's maternal uncle.
Step 2: "The daughter of my mother's brother" is the daughter of Neha's maternal uncle. This makes her Neha's cousin.
Step 3: "He is the husband of the daughter of my mother's brother" means he is the husband of Neha's cousin.
Step 4: The husband of one's cousin is one's cousin-in-law or brother-in-law (if the cousin is considered a sister-in-law in a broader sense, or if the cousin's husband is treated as a brother-in-law). In relation puzzles, the husband of a cousin is generally considered a brother-in-law.

Final Answer: Brother-in-law

Answer: (C)

Go Back to Question 3

Q4.

Solution

Concept: This is a blood relation problem. We need to trace the family connections to determine the relationship between T and R.

Solution: Step 1: "P is the father of Q." (P → Father of → Q)
Step 2: "R is the sister of Q." (R ↔ Sister of ↔ Q). Since P is Q's father, P is also R's father.
Step 3: "S is the mother of P." (S → Mother of → P). Since P is R's father, S is R's paternal grandmother.
Step 4: "T is the husband of S." (T ↔ Husband of ↔ S). Since S is R's paternal grandmother, T is the husband of R's paternal grandmother.
Step 5: The husband of one's paternal grandmother is one's paternal grandfather. Therefore, T is R's paternal grandfather.

Final Answer: Grandfather

Answer: (A)

Go Back to Question 4

Q5.

Solution

Concept: This is a blood relation problem. We need to decipher the relationship from Kunal's perspective by tracing the lineage.

Solution:

Step 1: Kunal says, "my grandmother".

Step 2: "The only daughter of my grandmother" must be Kunal's mother.

Step 3: The boy is described as "the son of the only daughter of my grandmother".
So, the boy is the son of Kunal's mother.

Step 4: Therefore, the boy is either Kunal himself or Kunal's brother. In such blood relation questions, this usually refers to Kunal himself.

Final Answer: Son

Answer: (D)

Go Back to Question 5

Q6.

Solution

Concept: This question requires evaluating proposed courses of action to address a problem stated in a statement. A course of action is valid if it is a practical, logical, and effective measure.

Statement: The number of road accidents caused by drunk driving has increased rapidly.

Courses of Action:
I. Conduct frequent alcohol testing on highways.
II. Ban all night-time travel permanently.

Analysis of Course of Action I:
Conducting frequent alcohol testing on highways is a direct and effective measure to combat drunk driving. Increased testing can deter potential drunk drivers and identify and penalize those who are driving under the influence. This action directly addresses the cause of the problem.

Analysis of Course of Action II: Banning all night-time travel permanently is an extreme, impractical, and disproportionate response. It would severely disrupt transportation, logistics, and the economy, and it is not a targeted solution to drunk driving, which can also occur during the day. This action is not a feasible or reasonable course of action.

Conclusion: Only Course of Action I is a logical and effective step to address the increase in road accidents caused by drunk driving.

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 a factor that can logically explain the situation described in the statement.

Statement: The demand for online learning platforms has increased sharply.

Possible Causes:
I. Availability of affordable internet services.
II. Flexibility offered by online education.

Analysis of Possible Cause I:
The increased availability of affordable internet services makes it easier and more accessible for people to connect to online learning platforms. Without reliable and affordable internet, online education would be difficult or impossible for many. Therefore, this is a plausible cause for the increased demand.

Analysis of Possible Cause II:
Online learning platforms offer flexibility in terms of time and location, allowing students to learn at their own pace and schedule. This flexibility is a significant advantage for many individuals, including working professionals, those with family commitments, or those in remote areas. This is a direct reason for the increased demand.

Conclusion: Both the availability of affordable internet and the flexibility of online education are significant factors that contribute to the sharp increase in demand for online learning platforms.

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 in response to a problem described in a statement. A valid course of action should be practical, logical, and effective in addressing the issue.

Statement: Several cities are facing severe traffic congestion during peak hours.

Courses of Action:
I. Improve public transportation facilities.
II. Ban ownership of private vehicles completely.

Analysis of Course of Action I:
Improving public transportation facilities, such as increasing the frequency, coverage, and comfort of buses, trains, or metro systems, can provide viable alternatives to private vehicles. If public transport is efficient and accessible, more people might choose it over driving, thus reducing the number of private vehicles on the road and alleviating traffic congestion. This is a practical and effective measure.

Analysis of Course of Action II:
Completely banning the ownership of private vehicles is an extreme and impractical solution. It would cause immense disruption to personal mobility, economic activities, and daily life, and is not a feasible or acceptable measure in most contexts. While it would reduce congestion, it is not a proportionate or realistic response.

Conclusion: Only Course of Action I is a sensible and effective measure to address severe traffic congestion.

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: Many banks are encouraging customers to use digital payment systems.

Possible Causes:
I. Increase in smartphone usage.
II. Reduction in physical cash transactions.

Analysis of Possible Cause I:
The widespread increase in smartphone usage directly facilitates the adoption and use of digital payment systems, which are often app-based or require a smartphone. More people having smartphones makes them more likely to use digital payment methods. Thus, this is a plausible cause.

Analysis of Possible Cause II:
A reduction in physical cash transactions implies a shift towards alternative payment methods, such as digital payments. If people are using less cash, they are more likely to be using digital systems, making banks' encouragement of these systems a natural response to this trend. This is also a plausible cause.

Conclusion:
Both the increase in smartphone usage (enabling digital payments) and the reduction in physical cash transactions (indicating a shift towards digital) are factors that would lead banks to encourage digital payment systems.

Final Answer: Both I and II are implicit

Answer: (C)

Go Back to Question 9

Q10.

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: Cases of identity theft on social media have increased significantly.

Courses of Action:
I. Educate users about online privacy measures.
II. Shut down all social networking websites.

Analysis of Course of Action I:
Educating users about online privacy measures, such as using strong passwords, being cautious about sharing personal information, and understanding privacy settings, is a proactive and effective way to help individuals protect themselves from identity theft. This empowers users and directly addresses the vulnerability that leads to such crimes.

Analysis of Course of Action II:
Shutting down all social networking websites is an extreme and impractical solution. It would eliminate the platform where identity theft occurs but would also remove the benefits and services these platforms provide, causing widespread disruption and societal impact. It is not a targeted or reasonable solution.

Conclusion: Only Course of Action I is a sensible and effective measure to address the increase in identity theft on social media.

Final Answer: Only I follows

Answer: (A)

Go Back to Question 10

Q11.

Solution

Concept: This is a syllogism problem. We analyze the given statements to determine which conclusions logically follow, often using Venn diagrams or step-by-step deduction.

Statements: 1. All fruits are healthy. (All F are H)
2. Some healthy things are expensive. (Some H are E)
3. No expensive thing is artificial. (No E are A)

Analysis of Conclusion I: Some healthy things are not artificial.
From statement 2, we know that some healthy things are expensive (Some H are E).
From statement 3, we know that no expensive thing is artificial (No E are A).
This means that the healthy things which are expensive are also not artificial. Therefore, some healthy things (those that are expensive) are not artificial.
Conclusion I follows.

Analysis of Conclusion II: No fruit is artificial.
From statement 1, all fruits are healthy (All F are H).
From statement 2, some healthy things are expensive (Some H are E).
From statement 3, no expensive thing is artificial (No E are A).

We know that all fruits are healthy. Some healthy things are expensive, and these healthy things (which are expensive) are not artificial. However, we don't know if fruits fall into the category of healthy things that are also expensive. It's possible that fruits are healthy things that are not expensive. If a fruit is healthy but not expensive, we cannot conclude it is not artificial, as the 'artificial' property is only excluded for expensive things.
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 conclusions logically follow.

Statements: 1. Some students are athletes. (Some S are A)
2. All athletes are disciplined. (All A are D)
3. No disciplined person is careless. (No D is C)

Analysis of Conclusion I: Some students are not careless.
From statement 1, we know that some students are athletes (Some S are A).
From statement 2, all athletes are disciplined (All A are D). This implies that the students who are athletes are also disciplined. So, some students are disciplined (Some S are D).
From statement 3, no disciplined person is careless (No D is C). This means that anything that is disciplined is not careless.
Since we have established that some students are disciplined, and all disciplined people are not careless, it logically follows that some students are not careless.
Conclusion I follows.

Analysis of Conclusion II: All students are disciplined.
Statement 1 says "Some students are athletes." This directly implies that not all students are necessarily athletes.
Statement 2 says "All athletes are disciplined." This means if a student is an athlete, then they are disciplined. However, if a student is not an athlete, we cannot conclude anything about their discipline from these statements.
Since we know not all students are athletes, we cannot conclude that all students are disciplined.
Conclusion II does not follow.

Final Answer: Only I follows

Answer: (A)

Go Back to Question 12

Q13.

Solution

Concept: This is a syllogism problem. We need to determine which conclusions logically follow from the given premises.

Statements: 1. All scientists are intelligent. (All S are I)
2. Some intelligent people are writers. (Some I are W)
3. No writer is arrogant. (No W is Ar)

Analysis of Conclusion I: Some intelligent people are not arrogant.
From statement 2, we know that some intelligent people are writers (Some I are W).
From statement 3, we know that no writer is arrogant (No W is Ar).
This means that the intelligent people who are writers are also not arrogant. Therefore, some intelligent people (those who are writers) are not arrogant.
Conclusion I follows.

Analysis of Conclusion II: No scientist is arrogant.
From statement 1, all scientists are intelligent (All S are I).
From statement 2, some intelligent people are writers (Some I are W).
From statement 3, no writer is arrogant (No W is Ar).

We know that all scientists are intelligent. Some intelligent people are writers, and these intelligent people (writers) are not arrogant. However, we do not know if scientists fall into the category of intelligent people who are also writers. It's possible that scientists are intelligent people who are not writers. If a scientist is intelligent but not a writer, we cannot conclude they are not arrogant, as the 'arrogant' property is only excluded for writers.
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 analyze the given statements to determine which conclusions logically follow.

Statements:

1. No car is electric. (No C is E)
2. Some electric vehicles are expensive. (Some E are Ex)
3. All expensive vehicles are luxurious. (All Ex are L)

Analysis of Conclusion I: Some luxurious vehicles are electric.

From statement 2, we know that some electric vehicles are expensive (Some E are Ex).
From statement 3, we know that all expensive vehicles are luxurious (All Ex are L).
This means that the electric vehicles which are expensive are also luxurious. Therefore, some electric vehicles (those that are expensive) are luxurious.
Since "Some electric vehicles are luxurious" implies "Some luxurious vehicles are electric" (by conversion of a particular affirmative statement), Conclusion I follows.

Analysis of Conclusion II: No car is luxurious.

From statement 1, no car is electric (No C is E).
From statement 2, some electric vehicles are expensive (Some E are Ex).
From statement 3, all expensive vehicles are luxurious (All Ex are L).

We know that no car is electric. Some electric vehicles are expensive, and these expensive vehicles are luxurious. This tells us about electric vehicles that are expensive and luxurious. It doesn't provide any link between 'cars' and 'luxurious vehicles'. The fact that cars are not electric doesn't preclude them from being luxurious. A car could be luxurious without being electric or expensive (based on these statements alone).
Conclusion II does not 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 right end.

Solution: From the clues:

$$A\_BE$$

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

$$DF$$

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

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

Here, the 4th person from the right (5th from the left) is B.
Another valid arrangement is:

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

Here, the 4th person from the right is E.
Since different valid arrangements give different answers, the required 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.

Solution: From the clues:

$$Q\ S\ P$$

because P sits second to the right of Q and S sits immediately left of P.

Now arrange the remaining persons R, T, U, V with:

$$R \text{ opposite } T$$

and

$$U \text{ is not adjacent to } R$$

One valid arrangement is:

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

Here, the person opposite P is U.

Another valid arrangement is:

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

Here, the person opposite P is V.

Since different valid arrangements give different answers, the person opposite P cannot be uniquely 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 six books based on the given relative positions to determine which book is at the bottom.

Solution: From the clues:

$$C > A > D$$

and E is immediately above B, forming the block:

$$EB$$

Also,

$$F \neq \text{bottom}, \qquad D \neq \text{top}$$

Now check possible valid arrangements.
One valid arrangement is:

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

Here, the bottom book is B.

Another valid arrangement is:

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

Here, the bottom book is D.

Since different valid arrangements give different bottom books, the answer cannot be uniquely determined.

Cannot be determined

Answer: (C)

Go Back to Question 17

Q18.

Solution

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

Solution: From the clues:

$$S\_Q$$

since Q stands second to the right of S.
Also,

$$RP$$

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

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

Here, the middle person (4th position) is Q.
Another valid arrangement is:

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

Here, the middle person is R.
Since different valid arrangements give different middle persons, the answer cannot be uniquely determined.

Final Answer: Cannot be determined

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: DOCTOR is coded as EPDUPS.

Analysis of the Code: Let's compare the letters of DOCTOR with EPDUPS position by position:
D → E (+1)
O → P (+1)
C → D (+1)
T → U (+1)
O → P (+1)
R → S (+1)

Each letter in "DOCTOR" is replaced by the very next letter in the English alphabet. This is a +1 shift for each letter.

Applying the Code to "MARKET": Now, we apply the same +1 shift to each letter of the word "MARKET":
M (+1) = N
A (+1) = B
R (+1) = S
K (+1) = L
E (+1) = F
T (+1) = U

Combining these shifted letters, we get the code for "MARKET" as NBSLFU.

Let's check the options:
A. NBSLFU
B. NCSLFU
C. NBTLFU
D. OBSLGV

Our derived code matches option A.

Final Answer: NBSLFU

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.

Given Code: "SILVER" is written as "REVLIS".

Analysis of the Code: Let's write down the word and its code:
SILVER
REVLIS

Comparing the letters, we can see that the order of the letters in "SILVER" has been reversed to form "REVLIS".
S I L V E R
R E V L I S
The last letter 'R' becomes the first.
The second to last letter 'E' becomes the second.
And so on, until the first letter 'S' becomes the last.

Applying the Code to "GARDEN": We need to apply the same reversal logic to the word "GARDEN". GARDEN
Reverse the order of the letters:
The last letter is 'N'.
The second to last letter is 'E'.
The third to last letter is 'D'.
The fourth to last letter is 'R'.
The fifth to last letter is 'A'.
The first letter is 'G'.
So, reversing "GARDEN" gives us "NEDRAG".

Let's check the options:
A. NEDRAG
B. NERDAG
C. NEDARG
D. NERAGD

Our derived code matches option A.

Final Answer: NEDRAG

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: CANDLE is coded as DBOEMF.

Analysis of the Code: Let's compare the letters of CANDLE with DBOEMF position by position:
C → D
A → B
N → O
D → E
L → M
E → F

Each letter in "CANDLE" is replaced by the very next letter in the English alphabet. This is a +1 shift for each letter.

Applying the Code to "MARKER":
Now, we apply the same +1 shift to each letter of the word "MARKER":
M (+1) = N
A (+1) = B
R (+1) = S
K (+1) = L
E (+1) = F
R (+1) = S

Combining these shifted letters, we get the code for "MARKER" as NBSLFS.

Let's check the options:
A. NBSLFS
B. NBSLGR
C. NBTLFS
D. OBSLFS

Our derived code matches option A.

Final Answer: NBSLFS

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: 7, 15, 31, 63, 127, ?

Analysis of the Series: Let's examine the relationship between consecutive terms.
Consider the operation: (previous term x 2) + a number.
7 x 2 + 1 = 14 + 1 = 15
15 x 2 + 1 = 30 + 1 = 31
31 x 2 + 1 = 62 + 1 = 63
63 x 2 + 1 = 126 + 1 = 127

The pattern is: current term = (previous term x 2) + 1.
To find the next term, we apply this rule to the last term (127):
Next term = (127 x 2) + 1
Next term = 254 + 1
Next term = 255.

Alternatively, we can look at the differences between consecutive terms:
15 - 7 = 8
31 - 15 = 16
63 - 31 = 32
127 - 63 = 64
The differences are 8, 16, 32, 64. This is a geometric progression where each term is doubled (8 x 2 = 16, 16 x 2 = 32, 32 x 2 = 64).
The next difference will be 64 x 2 = 128.
So, the next term is 127 + 128 = 255.

Let's check the options:
A. 191
B. 223
C. 255
D. 257

The calculated next term is 255, which matches option C.

Final Answer: 255

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.

Series: C, F, K, R, A, ?

Analysis of the Series: Let's find the position of each letter in the English alphabet:
C = 3
F = 6
K = 11
R = 18
A = 1

Now, let's look at the differences between the positions of consecutive letters:
F - C = 6 - 3 = 3
K - F = 11 - 6 = 5
R - K = 18 - 11 = 7

The differences are 3, 5, 7. This is a sequence of odd numbers, increasing by 2.
The next difference should be 7 + 2 = 9.
So, the next letter's position should be R's position + 9.
R is the 18th letter.
18 + 9 = 27.

Since there are only 26 letters in the alphabet, we wrap around.
The 27th position means 27 - 26 = 1st position.
The 1st letter of the alphabet is A.
This matches the last given letter in the series.

The pattern of increments is +3, +5, +7, +9. The next increment should be +11 (since the increment increases by 2 each time: 5-3=2, 7-5=2, 9-7=2).
So, the next letter's position will be A's position + 11.
A is the 1st letter.
1 + 11 = 12.

The 12th letter of the alphabet is L.

Final Answer: L

Answer: (A)

Go Back to Question 23

Q24.

Solution

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

Series: 4, 13, 40, 121, 364, ?

Analysis of the Series: Let's examine the relationship between consecutive terms.
Consider the operation: (previous term x 3) + a number.
4 x 3 + 1 = 12 + 1 = 13
13 x 3 + 1 = 39 + 1 = 40
40 x 3 + 1 = 120 + 1 = 121
121 x 3 + 1 = 363 + 1 = 364

The pattern is: current term = (previous term x 3) + 1.
To find the next term, we apply this rule to the last term (364):
Next term = (364 x 3) + 1
Next term = 1092 + 1
Next term = 1093.

Let's check the options:
A. 729
B. 981
C. 1093
D. 1456

The calculated next term is 1093, which matches option C.

Final Answer: 1093

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 geometric shapes. We need to find a common characteristic shared by most items and identify the one that does not fit.

Options:
A. Triangle
B. Square
C. Circle
D. Pentagon

Analysis: Let's consider the properties of each shape:
A. Triangle: A polygon with 3 sides. It is a 2-dimensional shape.
B. Square: A polygon with 4 equal sides and 4 right angles. It is a 2-dimensional shape.
C. Circle: A set of points equidistant from a center. It is a 2-dimensional shape, but it is not a polygon (it has a curved boundary, not straight line segments).
D. Pentagon: A polygon with 5 sides. It is a 2-dimensional shape.

The options A, B, and D are all polygons, which are 2-dimensional shapes formed by straight line segments.
A Circle is a 2-dimensional shape but is not a polygon because its boundary is curved.

Therefore, Circle is the odd one out.

Final Answer: Circle

Answer: (C)

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. Iron
B. Copper
C. Silver
D. Wood

Analysis:

Let's examine the nature of each item:
A. Iron: A metal. It is a chemical element (Fe).
B. Copper: A metal. It is a chemical element (Cu).
C. Silver: A precious metal. It is a chemical element (Ag).

D. Wood: A porous and fibrous structural tissue found in the stems and roots of trees and other woody plants. It is an organic material, primarily composed of cellulose.

Iron, Copper, and Silver are all metals. Metals share common properties like conductivity, malleability, and metallic luster.
Wood is an organic material and does not share these metallic properties.

Therefore, Wood is the odd one out.

Final Answer: Wood

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.

Movement Steps:

1. The person walks 20m North.
2. Then walks 21m East.
3. Then walks 20m South.

Visualization and Calculation:

The movement North and the movement South are in opposite directions.

- The person moves 20m North.
- Then moves 20m South.

These two movements cancel each other out in the North-South direction. The person ends up at the same North-South level as their starting point.

The only remaining displacement is the 21m East movement.

Therefore, the person is 21m East of their starting point.

The distance from the starting point is the magnitude of the net displacement. Since the North-South movements cancelled out, the net displacement is purely in the East direction.

Distance = 21m.

Alternatively, using coordinates:

Start at (0,0).

1. 20m North: Position (0, 20).
2. 21m East: Position (0+21, 20) = (21, 20).
3. 20m South: Position (21, 20-20) = (21, 0).

The final position is (21, 0).

The distance from the starting point (0, 0) to the final point (21, 0) is:

Distance = $\sqrt{(21-0)^2 + (0-0)^2} = \sqrt{21^2} = 21$ meters.

Final Answer: 21m

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 West.
Step 1: Turn 135° **clockwise.**
From West:

- 90° clockwise leads to North.
- Another 45° clockwise leads to North-East.

So, after the first turn, he faces:

North-East

Step 2: Turn 45° **anticlockwise.**
Turning 45° anticlockwise from North-East brings him to:

North

Verification using degrees:
Taking North as 0°:

$$\text{West} = 270^\circ$$

After turning 135° clockwise:

$$270^\circ + 135^\circ = 405^\circ$$

$$405^\circ - 360^\circ = 45^\circ$$

45° represents North-East.
Now turning 45° anticlockwise:

$$45^\circ - 45^\circ = 0^\circ$$

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

Final Answer: 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 rhombus is a parallelogram.
- A parallelogram is defined as a quadrilateral with two pairs of parallel sides.
- A rhombus is defined as a quadrilateral with four equal sides.
- Properties of a rhombus include having opposite sides parallel. Therefore, a rhombus meets the definition of a parallelogram. Assertion (A) is true.

Reason (R): Opposite sides of a rhombus are parallel.
- This statement correctly describes a property of a rhombus. This is part of the definition of a parallelogram.

Relationship between A and R:
The reason given (Opposite sides of a rhombus are parallel) is a fundamental property that directly fulfills the definition of a parallelogram. Since a rhombus possesses this characteristic, it is classified as a parallelogram. The reason directly explains why the assertion is true.

Therefore, both the assertion and the reason are true, and the reason explains the assertion.

Final Answer: Both A and R are true, and R explains A

Answer: (A)

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.

Statements: 1. Some engineers are managers. (Some E are M)
2. All managers are educated. (All M are Ed)

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

Analysis of Conclusion II: All educated people are managers.
Statement 2 says "All managers are educated." This means the set of managers is a subset of the set of educated people. However, it does not state that the set of educated people is a subset of the set of managers.
It is possible for there to be educated people who are not managers. For example, educated doctors, teachers, artists, etc., are educated but not necessarily managers.
The statement "All managers are educated" does not imply "All educated people are managers."
Conclusion II does not follow.

Final Answer: Only I follows

Answer: (A)

Go Back to Question 30

Answer Key

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