

# Bihar B.Ed CET Logical & Analytical Reasoning

## Sample Paper – 10

Duration: 25 Minutes

Maximum Marks: 25

### Instructions

- This paper contains **25** Multiple Choice Questions (Single Correct Answer), modelled on the Logical & Analytical Reasoning section of **Bihar B.Ed CET**.
- Each correct answer carries **+1 mark**. There is **no negative marking** for incorrect or unattempted answers.
- Only **one** option is correct. Choose carefully.
- Use of mobile phones, calculators, or electronic gadgets is strictly prohibited.
- Rough work may be done in the margin of the question paper.

**Q1.** Find the missing term in the series: 1, 4, 9, 16, 25, \_\_\_\_\_

- (A) 30
- (B) 36
- (C) 42
- (D) 32

**Q2.** Find the next letter in the series: Z, X, V, T, R, \_\_\_\_\_

- (A) Q
- (B) O
- (C) P
- (D) N

**Q3.** Choose the correct analogy:

**Pen : Ink :: Lamp : \_\_\_\_\_**



- (A) Oil
- (B) Light
- (C) Flame
- (D) Wax

**Q4.** Choose the correct analogy:

9 : 81 :: 12 : \_\_\_\_\_

- (A) 108
- (B) 120
- (C) 132
- (D) 144

**Q5.** Which of the following is the **odd one out**?

- (A) Rose
- (B) Lotus
- (C) Jasmine
- (D) Mango

**Q6.** In a certain code language, TEACHER is written as VGCEJGT. Using the same code, how will CODE be written?

- (A) DPCF
- (B) EQFG
- (C) FRHH
- (D) BMBF

**Q7.** Anuj's father's mother's son is Rohit. How is Rohit related to Anuj?

- (A) Brother
- (B) Father
- (C) Uncle



(D) Cousin

**Q8.** In a certain code, each word is represented by the **sum of positional values** of its letters ( $A = 1, B = 2, \dots, Z = 26$ ).

If  $BALL = 27$ , then  $BOOK = ?$

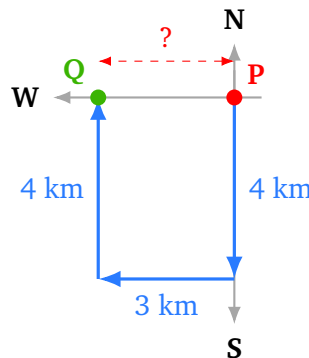
(A) 39

(B) 43

(C) 47

(D) 51

**Q9.** A person starts from point P, walks **4 km towards the South**, then turns **right** and walks **3 km towards the West**, and finally turns **right** and walks **4 km towards the North**, reaching point Q. What is the straight-line distance from P to Q?



(A) 7 km

(B) 3 km

(C) 5 km

(D) 11 km

**Q10.** In a row, Meena is **8th from the left** end and also **8th from the right** end. How many students are there in the row?

(A) 15

(B) 14



(C) 16

(D) 17

**Q11. Statements:**

No fish is a mammal.

All dolphins are mammals.

**Conclusions:**

I. No dolphin is a fish.

II. All fish are dolphins.

Which of the following is correct?

(A) Only Conclusion I follows

(B) Only Conclusion II follows

(C) Both Conclusions I and II follow

(D) Neither Conclusion I nor Conclusion II follows

**Q12. Statements:**

All roads lead to Delhi.

Some highways are roads.

**Conclusions:**

I. Some highways lead to Delhi.

II. All highways lead to Delhi.

Which of the following is correct?

(A) Only Conclusion I follows

(B) Only Conclusion II follows

(C) Both Conclusions I and II follow

(D) Neither Conclusion I nor Conclusion II follows

**Q13. Statement:** “Reading regularly improves vocabulary.”

**Conclusions:**



- I. People who read regularly tend to have a better vocabulary.
- II. Non-readers have absolutely no vocabulary whatsoever.

Which conclusion(s) follow?

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

**Q14. Statement:** “Warning: Wet floor — Risk of slipping.”

**Assumptions:**

- I. Someone may slip on the wet floor.
- II. The floor was recently mopped by the cleaning staff.

Which assumption(s) is/are implicit?

- (A) Only Assumption I is implicit
- (B) Only Assumption II is implicit
- (C) Both Assumptions I and II are implicit
- (D) Neither Assumption I nor Assumption II is implicit

**Q15. Statement:** “Should voting be made compulsory in India?”

**Arguments:**

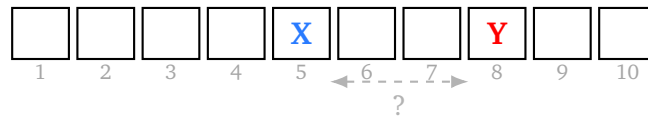
- I. Yes, compulsory voting ensures greater political participation and a stronger democracy.
- II. No, compulsory voting violates the individual’s fundamental freedom of choice.

Which argument(s) is/are strong?

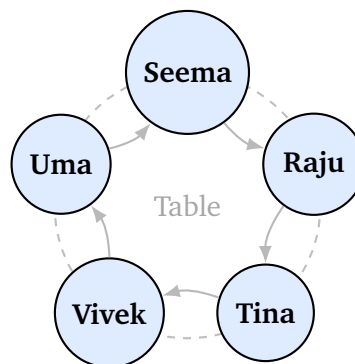
- (A) Only Argument I is strong
- (B) Only Argument II is strong
- (C) Both Arguments I and II are strong
- (D) Neither Argument I nor Argument II is strong



- Q16.** In a row of 10 students, X is at the 5th position from the left and Y is at the 3rd position from the right. How many students are sitting between X and Y?



- (A) 1  
(B) 2  
(C) 3  
(D) 4
- Q17.** Five friends Raju, Seema, Tina, Uma, and Vivek sit around a circular table, all facing the centre. Raju is to the immediate right of Seema. Tina is to the immediate right of Raju. Uma is to the immediate right of Vivek. Who sits to the immediate right of Tina?

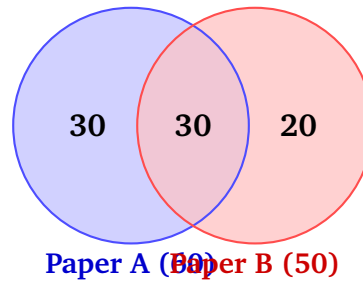


- (A) Raju  
(B) Seema  
(C) Vivek  
(D) Uma
- Q18.** If @ means +, # means  $\times$ , & means  $-$ , and \$ means  $\div$ , find the value of:  $12 @ 3 \# 2 \& 4 \$ 2$
- (A) 12



- (B) 14
- (C) 16
- (D) 18

**Q19.** In a survey of **100 people**, **60** read Newspaper A, **50** read Newspaper B, and **30** read **both**. How many people read **neither** newspaper?

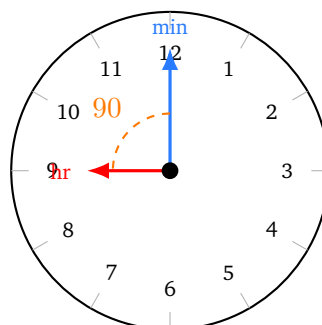


- (A) 20
- (B) 30
- (C) 40
- (D) 10

**Q20.** If today is **Monday**, what day of the week will it be **100 days** from now?

- (A) Monday
- (B) Tuesday
- (C) Wednesday
- (D) Thursday

**Q21.** What is the **smaller** angle (in degrees) between the **minute hand** and the **hour hand** of a clock at **9:00**?



- (A) 270
- (B) 90
- (C) 180
- (D) 120

**Q22.** Find the next term in the series: 3Z, 6Y, 9X, 12W, \_\_\_\_\_

- (A) 14V
- (B) 15W
- (C) 15V
- (D) 16V

**Q23.** Which of the following is **NOT** a prime number?

- (A) 7
- (B) 11
- (C) 15
- (D) 13

**Q24.** Find the missing number ( ? ) in the following table:

|   |   |    |
|---|---|----|
| 2 | 3 | 5  |
| 4 | 6 | 10 |
| 6 | 9 | ?  |

- (A) 12
- (B) 13
- (C) 14
- (D) 15

**Q25.** On a standard die, opposite faces always sum to 7 (i.e., 1 is opposite 6, 2 is opposite 5, 3 is opposite 4). If the face showing **6** is on **top** and the face showing **2** is **facing you**, which number is at the **bottom**?



- (A) 1
- (B) 2
- (C) 3
- (D) 4



## Detailed Solutions

Q1.

## Solution

**Concept — Number Series (Perfect Squares):** Each term is the square of its position number in the series.

**Step 1 — Identify the pattern:**

- Term 1:  $1 = 1^2$
- Term 2:  $4 = 2^2$
- Term 3:  $9 = 3^2$
- Term 4:  $16 = 4^2$
- Term 5:  $25 = 5^2$
- Term 6:  $? = 6^2 = 36$

**Step 2 — Verify via differences:**  $+3, +5, +7, +9, +11$  — differences are consecutive odd numbers. Next term  $= 25 + 11 = 36$  ✓

**Why other options are wrong:**

- Option A (30): 30 is not a perfect square ( $5^2 = 25, 6^2 = 36$ ).
- Option C (42): 42 is not a perfect square.
- Option D (32): 32 is not a perfect square.

**Final Answer:** The missing term is 36  $\Rightarrow$  B

Answer: (B) [Go Back to Q1](#)

Q2.

## Solution

**Concept — Letter Series (Alternate Letters, Backward):** Every term skips one letter and the series moves backwards through the alphabet.

**Step 1 — Analyse the series:**

- $Z(26) \xrightarrow{-2} X(24) \xrightarrow{-2} V(22) \xrightarrow{-2} T(20) \xrightarrow{-2} R(18) \xrightarrow{-2} P(16).$

Each term decreases by 2 positions (skipping one letter) in the alphabet.

**Step 2 — Compute the next term:**  $R(18) - 2 = P(16).$

**Why other options are wrong:**



- Option A (Q): Q is the 17th letter;  $18 - 1 = 17$  — decrement of only 1, not 2.
- Option B (O): O is the 15th letter;  $18 - 3 = 15$  — decrement of 3, not 2.
- Option D (N): N is the 14th letter;  $18 - 4 = 14$  — decrement of 4, not 2.

**Final Answer:** The next letter is P  $\Rightarrow$  C

**Answer: (C)** [Go Back to Q2](#)

**Q3.**

### Solution

**Concept — Word Analogy (Instrument–Fuel):** The second word is the consumable material that the first instrument uses in order to function.

**Step 1 — Establish the given pair:** A *pen* uses *ink* as the material it consumes to write.

**Step 2 — Apply the same logic:** A traditional *lamp* burns *oil* as its fuel to produce light.

**Why other options are wrong:**

- Option B (Light): Light is the *output* of the lamp, not its fuel — ink is the input used by the pen, not its output (writing).
- Option C (Flame): Flame is the intermediate process, not the fuel itself.
- Option D (Wax): Wax is the fuel of a candle, not a lamp.

**Final Answer:** Lamp uses Oil  $\Rightarrow$  A

**Answer: (A)** [Go Back to Q3](#)

**Q4.**

### Solution

**Concept — Number Analogy (Square Relationship):** The second number in each pair is the *square* of the first number.

**Step 1 — Verify the given pair:**  $9^2 = 9 \times 9 = 81$  ✓

**Step 2 — Apply to the unknown:**  $12^2 = 12 \times 12 = 144$

**Why other options are wrong:**

- Option A (108):  $12 \times 9 = 108$  — product of 12 and 9, not  $12^2$ .



- Option B (120):  $12 \times 10 = 120$  — no standard power relationship.
- Option C (132):  $12 \times 11 = 132$  — no standard power relationship.

**Final Answer:**  $12^2 = 144 \Rightarrow$  D

Answer: (D) [Go Back to Q4](#)

**Q5.**

### Solution

**Concept — Odd One Out (Botanical Classification):** Three items belong to one plant-product category; the fourth belongs to a different category.

**Step 1 — Classify each option:**

- Rose: a *flower* (ornamental, used in gardens and perfumery).
- Lotus: a *flower* (national flower of India).
- Jasmine: a *flower* (fragrant, used in garlands and perfumes).
- **Mango:** a *fruit* (national fruit of India), not a flower.

**Step 2 — Identify the odd one:** Rose, Lotus, and Jasmine are all flowers. Mango is a fruit — it does not belong to the same category.

**Why other options are wrong:**

- Option A (Rose): A flower — belongs to the dominant category.
- Option B (Lotus): A flower — belongs to the dominant category.
- Option C (Jasmine): A flower — belongs to the dominant category.

**Final Answer:** Mango is the odd one out  $\Rightarrow$  D

Answer: (D) [Go Back to Q5](#)

**Q6.**

### Solution

**Concept — Coding-Decoding (Letter Shift +2):** Each letter of the word is replaced by the letter that appears 2 positions later in the English alphabet.

**Step 1 — Verify with TEACHER:**

$T(+2) \rightarrow V, \quad E(+2) \rightarrow G, \quad A(+2) \rightarrow C, \quad C(+2) \rightarrow E, \quad H(+2) \rightarrow J, \quad E(+2) \rightarrow G,$   
 $R(+2) \rightarrow T$



TEACHER  $\rightarrow$  VGCEJGT ✓**Step 2 — Encode CODE:**C( $3 + 2 = 5$ )  $\rightarrow$  E, O( $15 + 2 = 17$ )  $\rightarrow$  Q, D( $4 + 2 = 6$ )  $\rightarrow$  F, E( $5 + 2 = 7$ )  $\rightarrow$  GCODE  $\rightarrow$  EQFG**Why other options are wrong:**

- Option A (DPCF): D is +1 from C — shift of 1, not 2.
- Option C (FRHH): F is +3 from C — shift of 3, not 2; also H is wrong for D+2.
- Option D (BMBF): B is -1 from C — a backward shift, opposite of the encoding rule.

**Final Answer:** CODE  $\rightarrow$  EQFG  $\Rightarrow$  BAnswer: (B) [Go Back to Q6](#)

Q7.

**Solution****Concept — Blood Relations:** Trace the family relationship step by step using standard kinship terms.**Step 1 — Trace the chain:**

- Anuj's *father's mother* = Anuj's **Paternal Grandmother**.
- Paternal Grandmother's *son* = Anuj's father or Anuj's father's brother.
- If Rohit is a different son (not Anuj's father), then Rohit is Anuj's **Paternal Uncle**.

**Step 2 — Conclusion:** Rohit is Anuj's Paternal Grandmother's son (other than Anuj's father), making Rohit Anuj's **Uncle**.**Why other options are wrong:**

- Option A (Brother): Brothers share the same parents; Rohit is a generation above Anuj.
- Option B (Father): The father is only one specific son of the grandmother; Rohit is stated as a separate person.
- Option D (Cousin): A cousin is the child of one's aunt or uncle, not a sibling of one's father.



**Final Answer:** Rohit is Anuj's Uncle  $\Rightarrow$  C

**Answer:** (C) [Go Back to Q7](#)

**Q8.**

### Solution

**Concept — Coding-Decoding (Sum of Letter Positions):** The code value of a word is the sum of the alphabetical positions of its letters (A= 1, B= 2, ..., Z= 26).

**Step 1 — Verify with BALL:**

$$B(2) + A(1) + L(12) + L(12) = 27\checkmark$$

**Step 2 — Calculate BOOK:**

$$B(2) + O(15) + O(15) + K(11) = 43$$

**Why other options are wrong:**

- Option A (39): Uses incorrect positional values, e.g., O= 12 instead of 15.
- Option C (47): Over-counts one of the letter values.
- Option D (51): Adds extra value not present in the word.

**Final Answer:** BOOK = 2 + 15 + 15 + 11 = 43  $\Rightarrow$  B

**Answer:** (B) [Go Back to Q8](#)

**Q9.**

### Solution

**Concept — Direction and Distance (Net Displacement):** Track the net displacement in each direction separately, then compute the resultant straight-line distance.

**Step 1 — Track displacements:**

- 4 km South: vertical displacement = -4 km.
- 3 km West: horizontal displacement = -3 km.
- 4 km North: vertical displacement = -4 + 4 = 0 km (the southward leg is completely cancelled).



**Step 2 — Compute straight-line distance:** Net displacement:  $-3$  km (West),  $0$  km (North/South).

$$PQ = \sqrt{(-3)^2 + 0^2} = \sqrt{9} = 3 \text{ km}$$

**Why other options are wrong:**

- Option A (7 km):  $4 + 3 = 7$  — adds two of the legs directly without cancellation.
- Option C (5 km):  $\sqrt{3^2 + 4^2} = 5$  — incorrectly retains both the North–South components without cancellation.
- Option D (11 km):  $4 + 3 + 4 = 11$  — total path length, not straight-line distance.

**Final Answer:** Point Q is 3 km from point P  $\Rightarrow$  **B**

**Answer: (B)** [Go Back to Q9](#)

**Q10.**

### Solution

**Concept — Ranking/Position (Total Count Formula):**

$$\text{Total} = \text{Position from left} + \text{Position from right} - 1$$

**Step 1 — Apply the formula:**

$$\text{Total} = 8 + 8 - 1 = 15$$

**Step 2 — Verify:** Students to Meena's left:  $8 - 1 = 7$ .

Students to Meena's right:  $8 - 1 = 7$ .

Total:  $7 + 1 + 7 = 15$  ✓

**Why other options are wrong:**

- Option B (14):  $8 + 8 - 2 = 14$  — subtracts 2 instead of 1.
- Option C (16):  $8 + 8 = 16$  — fails to subtract 1 for Meena herself.
- Option D (17):  $8 + 8 + 1 = 17$  — adds instead of subtracts.

**Final Answer:** Total students in the row = 15  $\Rightarrow$  **A**

**Answer: (A)** [Go Back to Q10](#)



Q11.

**Solution****Concept — Syllogism (Negative + Positive Premises):****Step 1 — Map the premises:** “No fish is a mammal”  $\Rightarrow \text{Fish} \cap \text{Mammals} = \emptyset$ .“All dolphins are mammals”  $\Rightarrow \text{Dolphins} \subseteq \text{Mammals}$ .**Step 2 — Test the conclusions:**

- **Conclusion I** (No dolphin is a fish): Since all dolphins are mammals and no mammal is a fish, it follows that no dolphin can be a fish. **Follows.**
- **Conclusion II** (All fish are dolphins): The premises say nothing about fish being dolphins; this is an unjustified claim. **Does not follow.**

**Why other options are wrong:**

- Option B (Only II): II is completely unsupported by the premises.
- Option C (Both): II does not follow from the premises.
- Option D (Neither): Conclusion I follows validly by combining the two premises.

**Final Answer:** Only Conclusion I follows  $\Rightarrow$  AAnswer: (A) [Go Back to Q11](#)

Q12.

**Solution****Concept — Syllogism (Universal + Particular Affirmative):****Step 1 — Map the premises:** “All roads lead to Delhi”  $\Rightarrow \text{Roads} \subseteq \text{Delhi-bound}$ .“Some highways are roads”  $\Rightarrow \text{Highways} \cap \text{Roads} \neq \emptyset$ .**Step 2 — Test the conclusions:**

- **Conclusion I** (Some highways lead to Delhi): Since some highways are roads, and all roads lead to Delhi, those highways that are roads must also lead to Delhi. **Follows.**
- **Conclusion II** (All highways lead to Delhi): Only *some* highways are roads; the rest may not be. We cannot extend the conclusion to *all* highways. **Does not follow.**

**Why other options are wrong:**

- Option B (Only II): II is an over-generalisation beyond what the premises permit.
- Option C (Both): II does not follow from the given premises.
- Option D (Neither): I is a valid inference from the chain of reasoning.

**Final Answer:** Only Conclusion I follows  $\Rightarrow$  A

Answer: (A) [Go Back to Q12](#)

**Q13.**

### Solution

**Concept — Statement and Conclusions:** A valid conclusion must follow directly from the statement without adding unstated conditions or making extreme claims.

**Step 1 — Evaluate Conclusion I:** “People who read regularly tend to have a better vocabulary” is a direct and measured restatement of the given statement. **Conclusion I follows.**

**Step 2 — Evaluate Conclusion II:** “Non-readers have absolutely no vocabulary whatsoever” is an extreme absolute claim. The statement talks about regular reading *improving* vocabulary — not that the absence of reading *destroys* all vocabulary. **Conclusion II does not follow.**

**Why other options are wrong:**

- Option B (Only II): II is an unjustified, extreme claim.
- Option C (Both): II is not supported by the statement.
- Option D (Neither): I is a valid and direct inference.

**Final Answer:** Only Conclusion I follows  $\Rightarrow$  A

Answer: (A) [Go Back to Q13](#)

**Q14.**

### Solution

**Concept — Statement and Assumptions:** An assumption is *implicit* if it is an unstated belief that the statement silently takes for granted to be meaningful and actionable.

**Step 1 — Test Assumption I (Someone may slip on the wet floor):** A “Risk of slipping” warning is only issued because slipping is a real possibility. This is the



very reason the warning exists. **Assumption I is implicit.**

**Step 2 — Test Assumption II (The floor was recently mopped by the cleaning staff):** The floor could be wet due to many reasons — a spill, rain, leakage, or mopping. The statement does not specify the cause. Assuming it was specifically mopped by staff is an additional specific detail not embedded in the statement. **Assumption II is not implicit.**

**Why other options are wrong:**

- Option B (Only II): II is a specific unwarranted assumption about the cause.
- Option C (Both): II is not a necessary implicit assumption.
- Option D (Neither): I is fundamental to the warning's purpose.

**Final Answer:** Only Assumption I is implicit  $\Rightarrow$  A

**Answer: (A)** [Go Back to Q14](#)

**Q15.**

### Solution

**Concept — Statement and Arguments (Strong vs. Weak):** A *strong* argument is directly relevant, logically sound, and raises a significant point for or against the statement.

**Step 1 — Evaluate Argument I:** “Compulsory voting ensures greater political participation and a stronger democracy” is a direct, historically backed, and significant reason *for* mandatory voting. **Strong.**

**Step 2 — Evaluate Argument II:** “Compulsory voting violates the individual’s fundamental freedom of choice” is an equally direct and principled reason *against* mandatory voting, grounded in constitutional and civil liberties. **Strong.**

**Why other options are wrong:**

- Option A (Only I strong): Argument II is equally substantive and directly relevant.
- Option B (Only II strong): Argument I addresses a core democratic benefit.
- Option D (Neither strong): Both arguments are directly relevant and significant.

**Final Answer:** Both Arguments I and II are strong  $\Rightarrow$  C

**Answer: (C)** [Go Back to Q15](#)



Q16.

**Solution**

**Concept — Linear Arrangement (Position Conversion):** Convert all positions to “from the left” and count seats strictly between the two persons.

**Step 1 — Find both positions from the left:**

- X is at position 5 from the left (given directly).
- Y is 3rd from the right in a row of 10: Position from left =  $10 - 3 + 1 = 8$ .

**Step 2 — Count students between X (pos 5) and Y (pos 8):** Positions strictly between 5 and 8: positions 6 and 7 — exactly 2 students.

**Why other options are wrong:**

- Option A (1): Under-counts; there are two positions (6 and 7) between 5 and 8.
- Option C (3): Includes one of the endpoints in the count.
- Option D (4): Greatly over-counts the positions between 5 and 8.

**Final Answer:** 2 students sit between X and Y  $\Rightarrow$  B

**Answer: (B)** [Go Back to Q16](#)

Q17.

**Solution**

**Concept — Circular Seating (Facing Centre, 5 Persons):** “Immediate right” = adjacent seat in the *clockwise* direction when facing the centre.

**Step 1 — Build the arrangement:**

- Raju is to the immediate right of Seema  $\Rightarrow$  clockwise: Seema  $\rightarrow$  Raju.
- Tina is to the immediate right of Raju  $\Rightarrow$  clockwise: Raju  $\rightarrow$  Tina.
- Uma is to the immediate right of Vivek  $\Rightarrow$  clockwise: Vivek  $\rightarrow$  Uma.
- Remaining seat for Vivek: After Tina, the next must be Vivek, then Uma, then back to Seema.

**Step 2 — Full clockwise order:**

Seema  $\rightarrow$  Raju  $\rightarrow$  Tina  $\rightarrow$  Vivek  $\rightarrow$  Uma  $\rightarrow$  Seema

Immediate right of Tina = **Vivek**.



**Why other options are wrong:**

- Option A (Raju): Raju is to the immediate *left* of Tina (Raju→Tina clockwise), not the right.
- Option B (Seema): Seema is two seats to Tina's right (via Vivek and Uma).
- Option D (Uma): Uma is two seats to Tina's right (one after Vivek).

**Final Answer:** Vivek sits to the immediate right of Tina  $\Rightarrow$  C

**Answer:** (C) [Go Back to Q17](#)

**Q18.**

**Solution**

**Concept — Mathematical Operations (Symbol Substitution):** Replace each symbol with its actual operator, then evaluate using standard BODMAS.

**Step 1 — Substitute symbols in  $12 @ 3 \# 2 \& 4 \$ 2$ :**

- @ becomes +; # becomes  $\times$ ; & becomes  $-$ ; \$ becomes  $\div$ .

Expression after substitution:  $12 + 3 \times 2 - 4 \div 2$

**Step 2 — Evaluate (BODMAS):**

$$3 \times 2 = 6$$

$$4 \div 2 = 2$$

$$12 + 6 - 2 = 16$$

**Why other options are wrong:**

- Option A (12): Results from evaluating left-to-right as  $(12 + 3) \times 2 - 4 \div 2 = (15 \times 2) - 2 = 30 - 2 = 28$ ? No — left-to-right gives  $((12 + 3) \times 2) - 4 \div 2 = ((15 \times 2) - 4) \div 2 = (30 - 4) \div 2 = 26 \div 2 = 13$ . Neither matches, so 12 is simply wrong.
- Option B (14): Results from a miscalculation such as  $12 + 3 \times 2 - 4 = 14$  (forgetting the division).
- Option D (18): Results from  $12 + 3 \times 2 = 18$  (ignoring the final  $-2$  term).

**Final Answer:** The value is 16  $\Rightarrow$  C

**Answer:** (C) [Go Back to Q18](#)



Q19.

**Solution****Concept — Venn Diagram / Inclusion-Exclusion Principle:**

$$n(A \cup B) = n(A) + n(B) - n(A \cap B)$$

$$\text{Neither} = \text{Total} - n(A \cup B)$$

**Step 1 — Find people who read at least one newspaper:**

$$n(A \cup B) = 60 + 50 - 30 = 80$$

**Step 2 — Find people who read neither:**

$$\text{Neither} = 100 - 80 = 20$$

**Verification:** Paper A only =  $60 - 30 = 30$ ; Paper B only =  $50 - 30 = 20$ ; Both = 30. Total active =  $30 + 20 + 30 = 80$ . Neither =  $100 - 80 = 20$  ✓

**Why other options are wrong:**

- Option B (30):  $100 - 70 = 30$  — uses an incorrect union of 70.
- Option C (40):  $100 - 60 = 40$  — considers only Paper A and ignores Paper B.
- Option D (10):  $100 - 90 = 10$  — uses an incorrect union of 90.

**Final Answer:** 20 people read neither newspaper  $\Rightarrow$  AAnswer: (A) [Go Back to Q19](#)

Q20.

**Solution****Concept — Calendar (Odd Days):** Divide the total number of days by 7; the remainder gives the number of “odd days” by which the day of the week advances.**Step 1 — Find odd days in 100:**

$$100 = 14 \times 7 + 2 \quad \Rightarrow \quad \text{Odd days} = 2$$

**Step 2 — Advance the starting day:** Monday + 2 days = **Wednesday**.  
(Monday +1 = Tuesday; Tuesday +1 = Wednesday.)



**Why other options are wrong:**

- Option A (Monday): Adds 0 odd days — treats 100 as a multiple of 7 (it is not).
- Option B (Tuesday): Advances by only 1 day — uses  $100 = 14 \times 7 + 1$  (incorrect remainder).
- Option D (Thursday): Advances by 3 days — uses an odd-day count of 3 (incorrect).

**Final Answer:** 100 days after Monday is Wednesday  $\Rightarrow$  C

**Answer: (C)** [Go Back to Q20](#)

**Q21.**

**Solution**
**Concept — Clock Angles:**

$$\theta = \left| 30H - \frac{11M}{2} \right|^\circ \quad (\text{take the smaller angle if } > 180)$$

**Step 1 — Substitute**  $H = 9, M = 0$ :

$$\theta = \left| 30 \times 9 - \frac{11 \times 0}{2} \right| = |270 - 0| = 270$$

Since  $270 > 180$ , take the smaller angle:  $360 - 270 = 90$ .

**Step 2 — Intuitive check:** At 9:00, the minute hand points to 12 and the hour hand points to 9. The clock face has 12 sectors of 30 each; from 12 to 9 going counterclockwise spans  $3 \times 30 = 90$ . The minor angle between the hands is 90. ✓

**Why other options are wrong:**

- Option A (270): This is the *reflex* angle, not the smaller (minor) angle between the hands.
- Option C (180): This is the angle at 6:00 when the hands point in opposite directions.
- Option D (120): This is the angle at 4:00 ( $4 \times 30 = 120$ ).

**Final Answer:** The smaller angle at 9:00 is 90  $\Rightarrow$  B

**Answer: (B)** [Go Back to Q21](#)



Q22.

**Solution**

**Concept — Alphanumeric Series (Two Independent Patterns):** The number component and the letter component each follow their own arithmetic pattern.

**Step 1 — Number pattern:** 3, 6, 9, 12, 15 — arithmetic sequence, common difference = 3.

**Step 2 — Letter pattern:** Z(26), Y(25), X(24), W(23), V(22) — each term decreases by 1 position in the alphabet.

**Step 3 — Combine:** Next term: number 15, letter V  $\Rightarrow$  15V.

**Why other options are wrong:**

- Option A (14V): 14 is +2 from 12 — number increment is wrong (should be +3).
- Option B (15W): W is 23rd letter;  $23 - 1 = 22$  should give V, not W — letter did not advance.
- Option D (16V): 16 is +4 from 12 — number increment is too large.

**Final Answer:** The next term is 15V  $\Rightarrow$

**Answer: (C)** [Go Back to Q22](#)

Q23.

**Solution**

**Concept — Odd One Out (Prime Numbers):** A prime number has exactly two distinct factors: 1 and itself. Identify which option is *not* prime.

**Step 1 — Check each option:**

- Option A: 7 — divisible only by 1 and 7. *Prime* ✓
- Option B: 11 — divisible only by 1 and 11. *Prime* ✓
- Option C:  $15 = 3 \times 5$  — has factors 1, 3, 5, 15. **Not prime**
- Option D: 13 — divisible only by 1 and 13. *Prime* ✓

**Step 2 — Identify the odd one:** 7, 11, and 13 are prime numbers. 15 is composite ( $15 = 3 \times 5$ ).

**Why other options are wrong:**

- Option A (7): A prime number — belongs to the dominant group.



- Option B (11): A prime number — belongs to the dominant group.
- Option D (13): A prime number — belongs to the dominant group.

**Final Answer:** 15 is not a prime number  $\Rightarrow$  C

Answer: (C) [Go Back to Q23](#)

**Q24.**

### Solution

**Concept — Missing Number in a Grid (Column Addition Pattern):** In each row, the third column equals the sum of the first two columns.

**Step 1 — Verify the pattern in existing rows:**

- Row 1:  $2 + 3 = 5$  ✓
- Row 2:  $4 + 6 = 10$  ✓
- Row 3:  $6 + 9 = 15$

**Step 2 — Cross-check with column patterns:**

- Col 1: 2, 4, 6 — increases by +2 each row.
- Col 2: 3, 6, 9 — increases by +3 each row.
- Col 3: 5, 10, ? — should increase by +5 each row:  $10 + 5 = 15$  ✓

**Why other options are wrong:**

- Option A (12):  $6 + 6 = 12$  — adds Col<sub>1</sub> to itself instead of Col<sub>1</sub> + Col<sub>2</sub>.
- Option B (13): Does not satisfy either the row or column pattern.
- Option C (14): Does not satisfy either the row or column pattern.

**Final Answer:** The missing number is 15  $\Rightarrow$  D

Answer: (D) [Go Back to Q24](#)



Q25.

**Solution**

**Concept — Dice (Opposite Face Rule):** On a standard die, opposite faces always sum to 7: the pairs are (1, 6), (2, 5), and (3, 4).

**Step 1 — Identify the known face positions:**

- Face showing **6** is on **top**.
- Face showing **2** is **facing the observer** (front face).

**Step 2 — Find the bottom face:** The bottom face is directly opposite the top face. Top = 6; since  $6 + 1 = 7$ , bottom = 1.

**Why other options are wrong:**

- Option B (2): 2 is the front face (facing the observer), not the bottom.
- Option C (3): 3 is opposite 4; it occupies a side face in this configuration.
- Option D (4): 4 is opposite 3; it also occupies a side face in this configuration.

**Final Answer:** The bottom face shows 1  $\Rightarrow$  A

Answer: (A)   [Go Back to Q25](#)



**Answer Key**

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

