

MAH BEd CET — Mental Ability

Sample Paper – 1

Duration: 36 Minutes

Maximum Marks: 40

Instructions

- This paper contains **40** Multiple Choice Questions (Single Correct Answer), modelled on the Mental Ability portion of MAH BEd CET.
- Each correct answer carries **+1 mark**. There is **no negative marking** for incorrect or unattempted answers.
- Only **one** option is correct. Choose carefully.
- Topics: Series, Analogies, Coding-Decoding, Classification, Syllogism, Blood Relations, Direction Sense, Dice Problems, Pattern Recognition.
- Use of mobile phones, calculators, or electronic gadgets is strictly prohibited. This is an OMR-based pen-and-paper test.

Q1. What is the next term in the series: 4, 9, 16, 25, 36, __?

- (A) 45
- (B) 49
- (C) 47
- (D) 48

Q2. What is the next term in the letter series: *B, D, G, K, P, __*?

- (A) T
- (B) U
- (C) V
- (D) W

Q3. What is the next term in the series: 3, 6, 12, 24, 48, __?



- (A) 96
- (B) 84
- (C) 92
- (D) 100

Q4. What is the next term in the series: 2, 5, 10, 17, 26, __?

- (A) 34
- (B) 35
- (C) 36
- (D) 37

Q5. What is the next term in the series: *A1, C4, E9, G16, __*?

- (A) H25
- (B) I25
- (C) J25
- (D) I16

Q6. What is the next term in the series: 1, 8, 27, 64, 125, __?

- (A) 180
- (B) 196
- (C) 216
- (D) 225

Q7. What is the next term in the series: 2, 3, 5, 9, 17, __?

- (A) 33
- (B) 29
- (C) 31
- (D) 35



Q8. Pen : Write :: Knife : _____

- (A) Sharpen
- (B) Point
- (C) Wound
- (D) Cut

Q9. Cow : Calf :: Horse : _____

- (A) Pony
- (B) Foal
- (C) Colt
- (D) Filly

Q10. France : Paris :: Japan : _____

- (A) Tokyo
- (B) Osaka
- (C) Kyoto
- (D) Nagoya

Q11. 4 : 16 :: 7 : _____

- (A) 42
- (B) 14
- (C) 49
- (D) 56

Q12. Triangle : 3 :: Hexagon : _____

- (A) 4
- (B) 5
- (C) 7



(D) 6

Q13. Brick : Wall :: Page : _____

- (A) Book
- (B) Chapter
- (C) Library
- (D) Author

Q14. Doctor : Hospital :: Teacher : _____

- (A) University
- (B) School
- (C) Classroom
- (D) Student

Q15. In a certain code language, BOOK is written as DQQM. Using the same rule, how is CHAIR coded?

- (A) FJCLT
- (B) EJCKR
- (C) EJCKT
- (D) FKCLT

Q16. In a certain code, RED = 27 (where each letter's position value is summed: R= 18, E= 5, D= 4). Using the same rule, find the code for BLUE.

- (A) 42
- (B) 38
- (C) 44
- (D) 40

Q17. If PENCIL is coded as LICNEP (letters reversed), how is MARKER coded?



- (A) REKARM
- (B) REKRAM
- (C) REMARK
- (D) MARKRE

Q18. If A= 1, B= 2, C= 3 and so on, what is the code for CAB?

- (A) 312
- (B) 213
- (C) 321
- (D) 132

Q19. Given the substitution: ★ = A, ◇ = B, ♣ = C, ♥ = D, ★★ = E.

Note: use ★ = A, ◇ = B, ♣ = C, ♥ = D, ◇ = E.

If (C)(A)(E)(B) is written as ♣ ★ ◇ ◇, then ♣ ★ ◇ ◇ stands for:

- (A) BACE
- (B) ABCE
- (C) CAEB
- (D) ACBE

Q20. If MANGO is coded as 13-1-14-7-15 (using A= 1, B= 2, ..., Z= 26), what is the code for APPLE?

- (A) 1-15-15-12-5
- (B) 1-16-15-12-5
- (C) 1-17-16-12-5
- (D) 1-16-16-12-5

Q21. Find the odd one out: Lion, Eagle, Tiger, Wolf

- (A) Lion
- (B) Eagle



- (C) Tiger
- (D) Wolf

Q22. Find the odd one out: 7, 11, 15, 19, 29

- (A) 29
- (B) 11
- (C) 19
- (D) 15

Q23. Find the odd one out: **Mercury, Venus, Mars, Moon**

- (A) Mercury
- (B) Venus
- (C) Mars
- (D) Moon

Q24. Find the odd one out: **Square, Rectangle, Triangle, Parallelogram**

- (A) Square
- (B) Rectangle
- (C) Triangle
- (D) Parallelogram

Q25. Find the odd one out: **Hammer, Author, Carpenter, Painter**

- (A) Hammer
- (B) Author
- (C) Painter
- (D) Carpenter

Q26. Find the odd one out: **Mango, Tomato, Papaya, Guava**



- (A) Mango
- (B) Tomato
- (C) Papaya
- (D) Guava

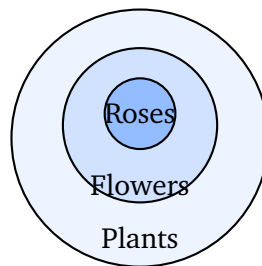
Q27. Statements:

- All roses are flowers.
- All flowers are plants.

Conclusions:

- I. All roses are plants.
- II. Some plants are roses.

The Venn diagram below illustrates the relationships:



- (A) Only Conclusion I follows
- (B) Only Conclusion II follows
- (C) Both Conclusions I and II follow
- (D) Neither Conclusion follows

Q28. Statements:

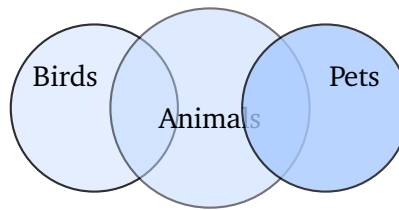
- Some birds are animals.
- Some animals are pets.

Conclusions:

- I. Some birds are pets.
- II. All pets are birds.



The Venn diagram below shows one valid arrangement of the premises:



- (A) Only Conclusion I follows
- (B) Only Conclusion II follows
- (C) Both Conclusions I and II follow
- (D) Neither Conclusion follows

Q29. Statements:

- Some chairs are tables.
- All tables are wooden.

Conclusions:

- I. All chairs are wooden.
- II. Some chairs are wooden.

Which conclusion(s) follow?

- (A) Only Conclusion I follows
- (B) Only Conclusion II follows
- (C) Both Conclusions I and II follow
- (D) Neither Conclusion follows

Q30. Statements:

- All doctors are graduates.
- Ramesh is a doctor.

Conclusions:

- I. Ramesh is a graduate.
- II. All graduates are doctors.



Which conclusion(s) follow?

- (A) Only Conclusion I follows
- (B) Only Conclusion II follows
- (C) Both Conclusions I and II follow
- (D) Neither Conclusion follows

Q31. Statements:

- All lions are brave.
- No brave animal is weak.

Conclusions:

- I. No lion is weak.
- II. Some lions are not weak.

Which conclusion(s) follow?

- (A) Only Conclusion I follows
- (B) Only Conclusion II follows
- (C) Both Conclusions I and II follow
- (D) Neither Conclusion follows

Q32. A is B's mother. C is A's brother. What is C's relation to B?

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

Q33. R is P's father. P is Q's father. What is R's relation to Q?

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



(D) Great-grandfather

Q34. X is Y's brother. Y is married to Z. What is X's relation to Z?

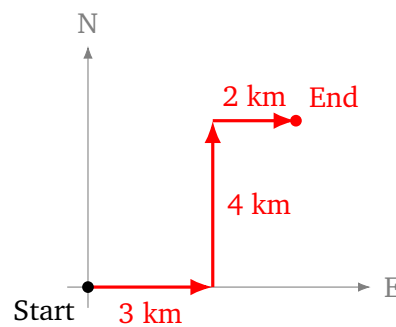
(A) Father

(B) Brother

(C) Brother-in-law

(D) Uncle

Q35. Rohan starts facing North. He turns right and walks 3 km, then turns left and walks 4 km, then turns right and walks 2 km. In which direction is he now facing?



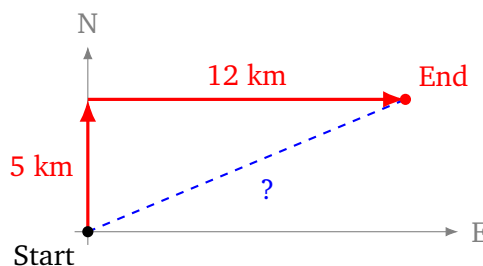
(A) North

(B) East

(C) South

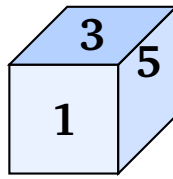
(D) West

Q36. Priya starts from a point, walks 5 km towards North, then turns and walks 12 km towards East. How far is she from her starting point?



- (A) 17 km
- (B) 15 km
- (C) 11 km
- (D) 13 km

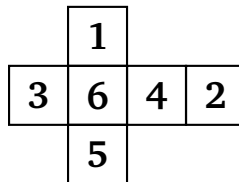
Q37. On a standard die, opposite faces always sum to 7. The figure below shows a die with 3 on the top face. Which number appears on the bottom face?



Top face = 3; bottom face = ?

- (A) 4
- (B) 5
- (C) 6
- (D) 3

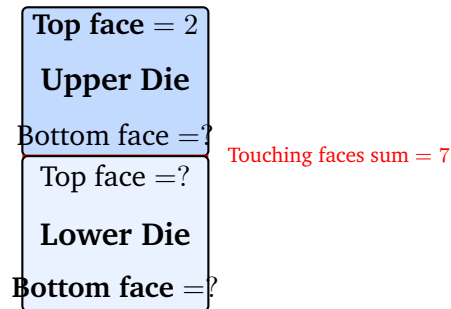
Q38. The figure below shows the unfolded net of a die. When folded into a cube, which face will be opposite to face 6?



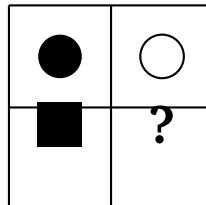
- (A) 1
- (B) 4
- (C) 2
- (D) 3



- Q39.** Two dice are stacked one on top of the other. The touching faces of the two dice always sum to 7. If the **top face of the upper die shows 2**, what number appears on the **bottom face of the lower die**?



- (A) 2
(B) 5
(C) 7
(D) 3
- Q40.** In the following 2×2 figure matrix, which figure should replace the question mark?



- (A) ■ (Filled square)
(B) ● (Filled circle)
(C) ○ (Empty circle)
(D) □ (Empty square)



Detailed Solutions**Q1.****Solution**

Concept — Perfect Squares Series: Each term in the series is the square of a natural number starting from 2.

Step 1 — Identify the pattern: $4 = 2^2$, $9 = 3^2$, $16 = 4^2$, $25 = 5^2$, $36 = 6^2$. The next term is $7^2 = 49$.

Why other options are wrong:

- Option A (45): Not a perfect square; $6^2 = 36$ and $7^2 = 49$.
- Option C (47): Not a perfect square; 47 is a prime number.
- Option D (48): Not a perfect square; $6^2 = 36$, $7^2 = 49$.

Final Answer: The next term is $7^2 = 49 \Rightarrow \boxed{49}$

Answer: (B) [Go Back to Q 1](#)

Q2.**Solution**

Concept — Increasing-Gap Letter Series: The gap between consecutive letters increases by 1 each time.

Step 1 — Identify the pattern: B(2) $\xrightarrow{+2}$ D(4) $\xrightarrow{+3}$ G(7) $\xrightarrow{+4}$ K(11) $\xrightarrow{+5}$ P(16) $\xrightarrow{+6}$ V(22).

Why other options are wrong:

- Option A (T): T is the 20th letter; $16 + 6 = 22$, not 20.
- Option B (U): U is the 21st letter; $16 + 6 = 22$, not 21.
- Option D (W): W is the 23rd letter; $16 + 6 = 22$, not 23.

Final Answer: The next letter is V (position 22) $\Rightarrow \boxed{V}$

Answer: (C) [Go Back to Q 2](#)



Q3.

Solution

Concept — Geometric Progression (Common Ratio = 2): Each term is obtained by multiplying the previous term by 2.

Step 1 — Verify the pattern: $3 \times 2 = 6$, $6 \times 2 = 12$, $12 \times 2 = 24$, $24 \times 2 = 48$, $48 \times 2 = 96$.

Why other options are wrong:

- Option B (84): $48 \times 2 = 96$, not 84.
- Option C (92): $48 \times 2 = 96$, not 92.
- Option D (100): $48 \times 2 = 96$, not 100.

Final Answer: $48 \times 2 = 96 \Rightarrow$ 96

Answer: (A) [Go Back to Q 3](#)

Q4.

Solution

Concept — Second-Order Differences: The differences between consecutive terms form an arithmetic progression.

Step 1 — Find first differences: $5 - 2 = 3$, $10 - 5 = 5$, $17 - 10 = 7$, $26 - 17 = 9$.
Differences: 3, 5, 7, 9 (odd numbers, increasing by 2).

Step 2 — Find the next term: The next difference is 11, so $26 + 11 = 37$.

Why other options are wrong:

- Option A (34): Would require a difference of 8, breaking the pattern.
- Option B (35): Would require a difference of 9 (already used).
- Option C (36): Would require a difference of 10, breaking the odd-number pattern.

Final Answer: $26 + 11 = 37 \Rightarrow$ 37

Answer: (D) [Go Back to Q 4](#)



Q5.

Solution

Concept — Mixed Letter-Number Series: The letters are every other odd-positioned letter; the numbers are perfect squares.

Step 1 — Letters: A(1st), C(3rd), E(5th), G(7th), I(9th).

Step 2 — Numbers: $1^2 = 1$, $2^2 = 4$, $3^2 = 9$, $4^2 = 16$, $5^2 = 25$.

Step 3 — Combine: Next term is **I25**.

Why other options are wrong:

- Option A (H25): H is the 8th letter (even position), not in the odd-position sequence.
- Option C (J25): J is the 10th letter; the 9th letter I is correct.
- Option D (I16): $5^2 = 25$, not 16.

Final Answer: I25 $\Rightarrow$ I25

Answer: (B) [Go Back to Q 5](#)

Q6.

Solution

Concept — Perfect Cubes Series: Each term is the cube of a natural number.

Step 1 — Identify the pattern: $1^3 = 1$, $2^3 = 8$, $3^3 = 27$, $4^3 = 64$, $5^3 = 125$, $6^3 = 216$.

Why other options are wrong:

- Option A (180): $5^3 = 125$, $6^3 = 216$; 180 is not a perfect cube.
- Option B (196): $196 = 14^2$, a perfect square but not a cube.
- Option D (225): $225 = 15^2$, a perfect square but not a cube.

Final Answer: $6^3 = 216 \Rightarrow$ 216

Answer: (C) [Go Back to Q 6](#)



Q7.

Solution

Concept — Double-Previous-Minus-1 Rule: Each term equals $2 \times (\text{previous term}) - 1$.

Step 1 — Verify: $2 \times 2 - 1 = 3$; $2 \times 3 - 1 = 5$; $2 \times 5 - 1 = 9$; $2 \times 9 - 1 = 17$; $2 \times 17 - 1 = 33$.

Why other options are wrong:

- Option B (29): $2 \times 17 - 1 = 33$, not 29.
- Option C (31): $2 \times 17 - 1 = 33$, not 31.
- Option D (35): $2 \times 17 - 1 = 33$, not 35.

Final Answer: $2 \times 17 - 1 = 33 \Rightarrow \boxed{33}$

Answer: (A) [Go Back to Q 7](#)

Q8.

Solution

Concept — Tool : Primary Function Analogy: The analogy identifies the primary, defining action of a tool.

Step 1 — Identify the relationship: A Pen is used to Write (its primary function). A Knife is used to Cut (its primary function).

Why other options are wrong:

- Option A (Sharpen): Sharpening is done to a knife, not by it as a primary function.
- Option B (Point): Pointing is not the primary functional use of a knife.
- Option C (Wound): Wounding is an incidental consequence, not the defining purpose.

Final Answer: Knife : Cut $\Rightarrow \boxed{\text{Cut}}$

Answer: (D) [Go Back to Q 8](#)



Q9.

Solution**Concept — Animal : Young One Analogy:****Step 1 — Identify the relationship:** The young one of a Cow is a Calf. The young one of a Horse (of either sex, up to one year) is a **Foal**.**Why other options are wrong:**

- Option A (Pony): A pony is a small breed of horse, not a young horse.
- Option C (Colt): A colt specifically refers to a young *male* horse (under 4 years).
- Option D (Filly): A filly specifically refers to a young *female* horse.

Final Answer: Horse : Foal $\Rightarrow$ Foal**Answer: (B)** [Go Back to Q 9](#)

Q10.

Solution**Concept — Country : Capital Analogy:****Step 1 — Identify the relationship:** Paris is the capital of France. **Tokyo** is the capital of Japan.**Why other options are wrong:**

- Option B (Osaka): Osaka is the second-largest city in Japan, not the capital.
- Option C (Kyoto): Kyoto was the historic capital but Tokyo is the current capital.
- Option D (Nagoya): Nagoya is an industrial city, not the capital.

Final Answer: Japan : Tokyo $\Rightarrow$ Tokyo**Answer: (A)** [Go Back to Q 10](#)

Q11.

Solution**Concept — Number : Square Analogy:****Step 1 — Identify the relationship:** $4 : 16$ because $4^2 = 16$. Similarly, $7 : ?$ gives $7^2 = 49$.**Why other options are wrong:**

- Option A (42): $42 = 6 \times 7$; not 7^2 .
- Option B (14): $14 = 2 \times 7$; not 7^2 .
- Option D (56): $56 = 8 \times 7$; not 7^2 .

Final Answer: $7^2 = 49 \Rightarrow \boxed{49}$ **Answer: (C)** [Go Back to Q 11](#)

Q12.

Solution**Concept — Shape : Number of Sides Analogy:****Step 1 — Identify the relationship:** A Triangle has 3 sides. A Hexagon has 6 sides (hex = six).**Why other options are wrong:**

- Option A (4): 4 sides = quadrilateral; not a hexagon.
- Option B (5): 5 sides = pentagon; not a hexagon.
- Option C (7): 7 sides = heptagon; not a hexagon.

Final Answer: Hexagon has 6 sides $\Rightarrow \boxed{6}$ **Answer: (D)** [Go Back to Q 12](#)

Q13.

Solution**Concept — Component : Whole Analogy:**

Step 1 — Identify the relationship: A Brick is a component used to build a Wall.
A Page is a component of a **Book**.

Why other options are wrong:

- Option B (Chapter): A chapter is a *section* of a book made of pages, not the whole.
- Option C (Library): A library contains books; the relationship would be Book : Library, not Page : Library.
- Option D (Author): An author *writes* a book; not a physical component.

Final Answer: Page : Book $\Rightarrow$ BookAnswer: (A) [Go Back to Q 13](#)

Q14.

Solution**Concept — Worker : Workplace Analogy:**

Step 1 — Identify the relationship: A Doctor works in a Hospital (their primary workplace). A Teacher works in a **School**.

Why other options are wrong:

- Option A (University): University is a workplace for professors/lecturers; “Teacher” in Indian context maps to School.
- Option C (Classroom): A classroom is a room inside a school, not the institution itself.
- Option D (Student): A student is a learner, not a workplace.

Final Answer: Teacher : School $\Rightarrow$ SchoolAnswer: (B) [Go Back to Q 14](#)

Q15.

Solution

Concept — Letter +2 Shift Coding: Each letter in the word is replaced by the letter two positions ahead in the alphabet.

Step 1 — Verify with BOOK → DQQM: B→D, O→Q, O→Q, K→M. ✓

Step 2 — Apply to CHAIR: C(3)→E(5), H(8)→J(10), A(1)→C(3), I(9)→K(11), R(18)→T(20).
Result: EJCKT.

Why other options are wrong:

- Option A (FJCLT): F would require C→F (+3); only +2 is correct.
- Option B (EJCKR): R+2 = T, not R.
- Option D (FKCLT): Multiple letters are wrong under +2 shift.

Final Answer: CHAIR → EJCKT ⇒ EJCKT

Answer: (C) [Go Back to Q 15](#)

Q16.

Solution

Concept — Sum of Alphabetical Position Values Coding:

Step 1 — Verify RED = 27: R= 18, E= 5, D= 4; $18 + 5 + 4 = 27$. ✓

Step 2 — Calculate for BLUE: B= 2, L= 12, U= 21, E= 5; $2 + 12 + 21 + 5 = 40$.

Why other options are wrong:

- Option A (42): An arithmetic error; the correct sum is 40.
- Option B (38): Possible if U is miscounted; U is the 21st letter.
- Option C (44): An arithmetic error; the correct sum is 40.

Final Answer: BLUE = $2 + 12 + 21 + 5 = 40$ ⇒ 40

Answer: (D) [Go Back to Q 16](#)



Q17.

Solution

Concept — Word Reversal Coding: The letters of the word are written in reverse order.

Step 1 — Verify PENCIL → LICNEP: P-E-N-C-I-L reversed = L-I-C-N-E-P. ✓

Step 2 — Apply to MARKER: M-A-R-K-E-R reversed = R-E-K-R-A-M = **REKRAM**.

Why other options are wrong:

- Option A (REKARM): Letters 4 and 5 are transposed; correct is REKRAM.
- Option C (REMARK): REMARK is a different word entirely, not the reversal of MARKER.
- Option D (MARKRE): This is a partial scramble, not a true reversal.

Final Answer: MARKER reversed = REKRAM ⇒ REKRAM

Answer: (B) [Go Back to Q 17](#)

Q18.

Solution

Concept — Alphabetical Position Coding (A= 1, B= 2, ...):

Step 1 — Assign values to CAB: C= 3, A= 1, B= 2. Reading in order: **312**.

Why other options are wrong:

- Option B (213): This would correspond to BAC, not CAB.
- Option C (321): This would correspond to CBA, not CAB.
- Option D (132): This would correspond to ACB, not CAB.

Final Answer: C= 3, A= 1, B= 2 ⇒ Code = 312 ⇒ 312

Answer: (A) [Go Back to Q 18](#)



Q19.

Solution

Concept — Symbol Substitution Coding: Each symbol represents a fixed letter.

Step 1 — Key: ★ = A, ◇ = B, ♣ = C, ♥ = D, ♦ = E.

Step 2 — Decode ♣ ★ ◇ ◇: ♣ = C, ★ = A, ◇ = E, ◇ = B. Result: **CAEB**.

Why other options are wrong:

- Option A (BACE): BACE would require ◇ ★ ♣ ◇.
- Option B (ABCE): ABCE would require ★ ◇ ♣ ◇.
- Option D (ACBE): ACBE would require ★ ♣ ◇ ◇.

Final Answer: ♣ ★ ◇ ◇ = CAEB ⇒ **CAEB**

Answer: (C) [Go Back to Q 19](#)

Q20.

Solution

Concept — Letter Position String Coding (A= 1, B= 2, ..., Z= 26):

Step 1 — Verify MANGO: M= 13, A= 1, N= 14, G= 7, O= 15 → 13-1-14-7-15. ✓

Step 2 — Encode APPLE: A= 1, P= 16, P= 16, L= 12, E= 5 → **1-16-16-12-5**.

Why other options are wrong:

- Option A (1-15-15-12-5): Uses O= 15 for P; P is the 16th letter.
- Option B (1-16-15-12-5): Second P is coded as 15 instead of 16.
- Option C (1-17-16-12-5): First P is coded as 17 (Q's value) instead of 16.

Final Answer: APPLE = 1-16-16-12-5 ⇒ **1-16-16-12-5**

Answer: (D) [Go Back to Q 20](#)



Q21.

Solution**Concept — Odd One Out (Classification by Type):****Step 1 — Classify:** Lion — Mammal. Eagle — **Bird**. Tiger — Mammal. Wolf — Mammal.**Step 2 — Identify the odd one:** Eagle is the only bird; all others are mammals.**Why other options are wrong:**

- Option A (Lion): Lion is a mammal, fitting with the group.
- Option C (Tiger): Tiger is a mammal, fitting with the group.
- Option D (Wolf): Wolf is a mammal, fitting with the group.

Final Answer: Eagle (bird; others are mammals) $\Rightarrow$ Eagle**Answer: (B)** [Go Back to Q 21](#)

Q22.

Solution**Concept — Odd One Out (Arithmetic Pattern):****Step 1 — Check differences:** $11 - 7 = 4$, $15 - 11 = 4$, $19 - 15 = 4$, $29 - 19 = 10$.**Step 2 — Identify the odd one:** All terms differ by 4 except for 29 (which has a gap of 10 from 19). The expected next term would be $19 + 4 = 23$, not 29.**Why other options are wrong:**

- Option B (11): $11 - 7 = 4$ and $15 - 11 = 4$; fits the pattern perfectly.
- Option C (19): $19 - 15 = 4$; fits the pattern perfectly.
- Option D (15): $15 - 11 = 4$; fits the pattern perfectly.

Final Answer: 29 does not fit the +4 pattern $\Rightarrow$ 29**Answer: (A)** [Go Back to Q 22](#)

Q23.

Solution**Concept — Odd One Out (Planet vs. Natural Satellite):****Step 1 — Classify:** Mercury — Planet. Venus — Planet. Mars — Planet. Moon — Natural satellite of Earth.**Step 2 — Identify the odd one:** Moon is Earth's natural satellite, not a planet.**Why other options are wrong:**

- Option A (Mercury): Mercury is the innermost planet of the Solar System.
- Option B (Venus): Venus is the second planet from the Sun.
- Option C (Mars): Mars is the fourth planet from the Sun.

Final Answer: Moon (natural satellite; others are planets) ⇒ MoonAnswer: (D) [Go Back to Q 23](#)

Q24.

Solution**Concept — Odd One Out (Number of Sides):****Step 1 — Count sides:** Square — 4 sides. Rectangle — 4 sides. Triangle — 3 sides. Parallelogram — 4 sides.**Step 2 — Identify the odd one:** Triangle has 3 sides; all others are quadrilaterals (4 sides).**Why other options are wrong:**

- Option A (Square): Quadrilateral with 4 equal sides; belongs with the group.
- Option B (Rectangle): Quadrilateral with 4 right angles; belongs with the group.
- Option D (Parallelogram): Quadrilateral with opposite sides parallel; belongs with the group.

Final Answer: Triangle (3 sides; others have 4 sides) ⇒ TriangleAnswer: (C) [Go Back to Q 24](#)

Q25.

Solution**Concept — Odd One Out (Tool vs. Profession):****Step 1 — Classify:** Hammer — **Tool**. Author — Profession. Carpenter — Profession. Painter — Profession.**Step 2 — Identify the odd one:** Hammer is an inanimate tool; the others are human professions.**Why other options are wrong:**

- Option B (Author): A person who writes; a profession.
- Option C (Painter): A person who paints; a profession.
- Option D (Carpenter): A person who works with wood; a profession.

Final Answer: Hammer (tool; others are professions) ⇒ HammerAnswer: (A) [Go Back to Q 25](#)

Q26.

Solution**Concept — Odd One Out (Fruit vs. Vegetable in Common Classification):****Step 1 — Classify:** Mango — Fruit. Tomato — **Vegetable** (in common/culinary classification). Papaya — Fruit. Guava — Fruit.**Step 2 — Identify the odd one:** Tomato is commonly classified as a vegetable in everyday usage and Indian classification; the others are universally regarded as fruits.**Why other options are wrong:**

- Option A (Mango): A sweet edible fruit; clearly a fruit.
- Option C (Papaya): A tropical fruit; clearly a fruit.
- Option D (Guava): A tropical fruit; clearly a fruit.

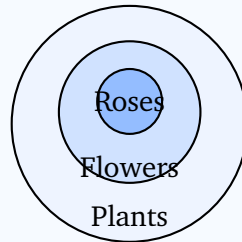
Final Answer: Tomato (vegetable in common usage; others are fruits) ⇒ TomatoAnswer: (B) [Go Back to Q 26](#)

Q27.

Solution

Concept — Syllogism with Universal Affirmative Statements: When all A are B and all B are C, then all A are C (transitive).

Step 1 — Draw the Venn diagram: Roses $\subset$ Flowers $\subset$ Plants (nested circles as shown below).



Step 2 — Test Conclusion I (All roses are plants): Since Roses $\subset$ Flowers $\subset$ Plants, every rose is definitely a plant. **Conclusion I follows.**

Step 3 — Test Conclusion II (Some plants are roses): Since roses exist within the Plants circle, at least some plants are roses. **Conclusion II follows.**

Final Answer: Both Conclusions I and II follow $\Rightarrow$ Both I and II

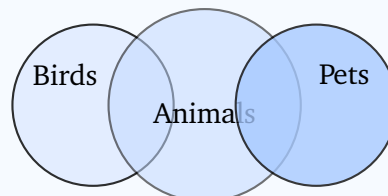
Answer: (C) [Go Back to Q 27](#)

Q28.

Solution

Concept — Syllogism with Particular Affirmative Statements: “Some A are B” and “Some B are C” do NOT guarantee any relationship between A and C.

Step 1 — Draw the Venn diagram: Birds and Animals partially overlap; Animals and Pets partially overlap; but Birds and Pets need not overlap.



Step 2 — Test Conclusion I (Some birds are pets): The diagram shows Birds and Pets may not overlap at all; this is not guaranteed. **Conclusion I does not necessarily follow.**



Step 3 — Test Conclusion II (All pets are birds): The premises give no basis for a universal statement about pets being birds. **Conclusion II does not follow.**

Final Answer: Neither Conclusion follows $\Rightarrow$ Neither

Answer: (D) [Go Back to Q 28](#)

Q29.

Solution

Concept — Syllogism (Particular + Universal): “Some A are B” combined with “All B are C” gives “Some A are C” but NOT “All A are C”.

Step 1 — Test Conclusion I (All chairs are wooden): Only some chairs are tables; those chairs that are tables are wooden. But the chairs that are NOT tables have no given connection to wooden. **Conclusion I does NOT follow.**

Step 2 — Test Conclusion II (Some chairs are wooden): The chairs that are tables are definitely wooden (from premise 2). So at least some chairs are wooden. **Conclusion II follows.**

Why other options are wrong:

- Option A (Only I): Conclusion I cannot be universally established.
- Option C (Both): Conclusion I does not follow.
- Option D (Neither): Conclusion II does follow.

Final Answer: Only Conclusion II follows $\Rightarrow$ Only II

Answer: (B) [Go Back to Q 29](#)

Q30.

Solution

Concept — Syllogism (Deductive Reasoning): If all members of a set have a property and an individual is a member of that set, the individual has that property.

Step 1 — Test Conclusion I (Ramesh is a graduate): All doctors are graduates (Premise 1). Ramesh is a doctor (Premise 2). By deduction, Ramesh is a graduate. **Conclusion I follows.**

Step 2 — Test Conclusion II (All graduates are doctors): The premises state all doctors are graduates, but this does NOT reverse to “all graduates are doctors.” Other graduates may exist. **Conclusion II does NOT follow.**



Why other options are wrong:

- Option B (Only II): Conclusion II is an invalid converse; it does not follow.
- Option C (Both): Conclusion II does not follow.
- Option D (Neither): Conclusion I does follow by direct deduction.

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

Answer: (A) [Go Back to Q 30](#)

Q31.

Solution

Concept — Syllogism (Universal Affirmative + Universal Negative): All A are B; No B are C $\Rightarrow$ No A are C.

Step 1 — Test Conclusion I (No lion is weak): All lions are brave (Premise 1). No brave animal is weak (Premise 2). Therefore, no lion is weak. **Conclusion I follows.**

Step 2 — Test Conclusion II (Some lions are not weak): Since NO lion is weak (from Conclusion I), it is certainly true that some lions are not weak. Conclusion II is a weaker (but valid) statement implied by Conclusion I. **Conclusion II follows.**

Why other options are wrong:

- Option A (Only I): Conclusion II also follows as a subset of Conclusion I.
- Option B (Only II): Conclusion I also follows directly.
- Option D (Neither): Both conclusions follow from the valid deduction chain.

Final Answer: Both Conclusions I and II follow $\Rightarrow$ Both I and II

Answer: (C) [Go Back to Q 31](#)

Q32.

Solution

Concept — Blood Relations (Two-Step Deduction):

Step 1 — Map the relationships:

- A is B's mother $\Rightarrow$ A is one generation above B.
- C is A's brother $\Rightarrow$ C and A are siblings (same generation as A).



Step 2 — Derive: C is the brother of B's mother. The brother of one's mother is called an **Uncle**.

Why other options are wrong:

- Option A (Father): The father would be A's husband, not A's brother.
- Option B (Grandfather): Grandfather is two generations above; C is only one generation above B (same as A).
- Option C (Brother): C is B's mother's brother, not B's own brother.

Final Answer: C is B's Uncle $\Rightarrow$ Uncle

Answer: (D) [Go Back to Q 32](#)

Q33.

Solution

Concept — Blood Relations (Generational Chain):

Step 1 — Map the chain: R is P's father (R is one generation above P). P is Q's father (P is one generation above Q). Therefore, R is two generations above Q.

Step 2 — Derive: $R \rightarrow P \rightarrow Q$. R is Q's **Grandfather**.

Why other options are wrong:

- Option B (Father): Father is only one generation above; R is two generations above Q.
- Option C (Uncle): Uncle is a sibling of a parent; R is a direct ancestor.
- Option D (Great-grandfather): Great-grandfather is three generations above; R is only two.

Final Answer: R is Q's Grandfather $\Rightarrow$ Grandfather

Answer: (A) [Go Back to Q 33](#)



Q34.

Solution**Concept — Blood Relations (In-Law Relationship):****Step 1 — Map the relationships:**

- X is Y's brother.
- Y is married to Z (Y and Z are spouses).

Step 2 — Derive: X is the brother of Z's spouse (Y). The sibling of one's spouse is a **Brother-in-law** (when the sibling is male).

Why other options are wrong:

- Option A (Father): X is Y's brother, not Y's parent.
- Option B (Brother): X is not Z's direct sibling; X is Z's spouse's sibling.
- Option D (Uncle): Uncle implies a generational difference; X is in the same generation as Y and Z.

Final Answer: X is Z's Brother-in-law $\Rightarrow$ Brother-in-law

Answer: (C) [Go Back to Q 34](#)

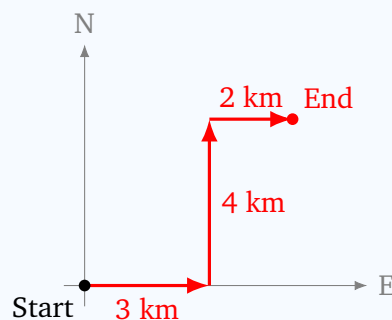
Q35.

Solution

Concept — Direction Sense (Tracking Turns): Right turn = 90° clockwise; Left turn = 90° counter-clockwise.

Step 1 — Trace Rohan's path:

- Starts facing **North**. Turns right $\rightarrow$ now facing **East**. Walks 3 km East.
- Turns left $\rightarrow$ now facing **North**. Walks 4 km North.
- Turns right $\rightarrow$ now facing **East**. Walks 2 km East.



Step 2 — Final direction: After the last right turn at (3,4) from facing North, Rohan now faces **East**.

Why other options are wrong:

- Option A (North): He was facing North before the last right turn.
- Option C (South): A right turn from North gives East, not South.
- Option D (West): West would require a left turn from North, or a right turn from South.

Final Answer: Rohan faces **East** $\Rightarrow$ East

Answer: (B) [Go Back to Q 35](#)

Q36.

Solution

Concept — Direction Sense (Pythagoras Theorem): When two legs of a right triangle are known, the hypotenuse gives the straight-line distance.

Step 1 — Identify the right triangle:



Step 2 — Apply Pythagoras: $d = \sqrt{5^2 + 12^2} = \sqrt{25 + 144} = \sqrt{169} = 13$ km.

Why other options are wrong:

- Option A (17 km): $5 + 12 = 17$ (simple addition, not Pythagoras).
- Option B (15 km): Incorrect; $\sqrt{225} = 15$ would require $9^2 + 12^2$ or $12^2 + 9^2$.
- Option C (11 km): $12 - 5 + 4 = 11$; no valid geometric basis here.

Final Answer: $\sqrt{5^2 + 12^2} = 13$ km $\Rightarrow$ 13 km

Answer: (D) [Go Back to Q 36](#)

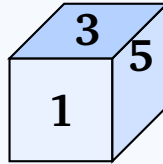


Q37.

Solution

Concept — Standard Die (Opposite Faces Sum to 7): On a standard die, the pairs of opposite faces are: $1 \leftrightarrow 6$, $2 \leftrightarrow 5$, $3 \leftrightarrow 4$.

Step 1 — Apply the rule: Top face = 3. Opposite face = $7 - 3 = 4$.



Top = 3; **Bottom** = $7 - 3 = 4$

Why other options are wrong:

- Option B (5): 5 is opposite to 2, not to 3.
- Option C (6): 6 is opposite to 1, not to 3.
- Option D (3): A face cannot be opposite to itself.

Final Answer: Bottom face = $7 - 3 = 4 \Rightarrow$ 4

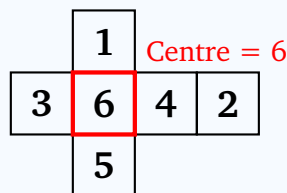
Answer: (A) [Go Back to Q 37](#)

Q38.

Solution

Concept — Die Net Folding: Identify which face is at the far end of the arm extending beyond an adjacent face to determine the face opposite to the centre.

Step 1 — Analyse the net:



Step 2 — Trace the arm containing 2: Starting from face 6 (centre), move right: $6 \rightarrow 4 \rightarrow 2$. Face 2 is at the end of the arm two steps from 6. When the net folds: face 4 becomes the right face, and face 2 wraps around to become the face *opposite* to 6.



Step 3 — Verify the other pairs: $1 \leftrightarrow 5$ (above and below 6), $3 \leftrightarrow 4$ (left of 6, and right-adjacent to 6 after 4 folds).

Why other options are wrong:

- Option A (1): Face 1 folds to become the top face; it is opposite to face 5.
- Option B (4): Face 4 folds to become the right face; it is opposite to face 3.
- Option D (3): Face 3 folds to become the left face; it is opposite to face 4.

Final Answer: Face opposite to 6 is 2 $\Rightarrow$ 2

Answer: (C) [Go Back to Q 38](#)

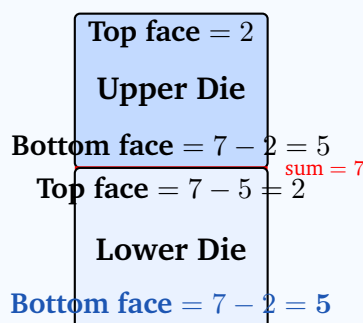
Q39.

Solution

Concept — Stacked Dice (Touching Faces Sum to 7):

Step 1 — Work through the upper die: Top of upper die = 2. Opposite face (bottom of upper die) = $7 - 2 = 5$.

Step 2 — Work through the lower die: Top of lower die touches bottom of upper die. Touching faces sum to 7, so: Top of lower die = $7 - 5 = 2$. Bottom of lower die = $7 - 2 = 5$.



Why other options are wrong:

- Option A (2): The top of the lower die = 2, but the bottom is $7 - 2 = 5$.
- Option C (7): 7 does not appear on a standard die (faces are 1–6).
- Option D (3): No step in the chain produces the value 3.

Final Answer: Bottom of lower die = 5 $\Rightarrow$ 5

Answer: (B) [Go Back to Q 39](#)

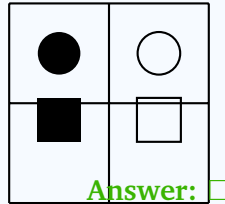


Q40.

Solution

Concept — Figure Matrix Pattern Recognition: Identify the rule governing rows and columns, then apply it to find the missing figure.

Step 1 — Observe the pattern:



Step 2 — Identify the rule:

- Left column: shapes are **filled** (solid).
- Right column: shapes are **empty** (outline only).
- Row 1: Circle (filled → empty).
- Row 2: Square (filled → **empty square** = □).

Why other options are wrong:

- Option A (■, Filled square): A filled square belongs in the left column, not the right.
- Option B (●, Filled circle): A circle does not follow the square pattern of Row 2.
- Option C (○, Empty circle): An empty circle belongs in Row 1, not Row 2.

Final Answer: The missing figure is an empty (outline) square □ ⇒ □

Answer: (D) [Go Back to Q 40](#)



Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	B	2	C	3	A	4	D	5	B
6	C	7	A	8	D	9	B	10	A
11	C	12	D	13	A	14	B	15	C
16	D	17	B	18	A	19	C	20	D
21	B	22	A	23	D	24	C	25	A
26	B	27	C	28	D	29	B	30	A
31	C	32	D	33	A	34	C	35	B
36	D	37	A	38	C	39	B	40	D

