

MAH BEd CET — Mental Ability

Sample Paper – 2

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. Find the missing number in the series:

100, 95, 85, 70, 50, ____

- (A) 20
- (B) 25
- (C) 30
- (D) 35

Q2. Find the next letter in the series:

A, C, F, J, O, ____

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



Q3. Find the missing number:

1, 2, 4, 7, 11, 16, ____

(A) 20

(B) 21

(C) 22

(D) 24

Q4. Find the missing number in the series:

4, 9, 25, 49, 121, ____

(A) 144

(B) 156

(C) 164

(D) 169

Q5. Find the next number in the series:

5, 10, 9, 18, 17, 34, 33, ____

(A) 64

(B) 66

(C) 68

(D) 70

Q6. Find the missing number:

0, 1, 1, 2, 3, 5, 8, 13, ____

(A) 21

(B) 19

(C) 20

(D) 22

Q7. Find the next term in the series:

2, 6, 12, 20, 30, ____



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

Q8. Choose the best analogy:

Elephant : Trumpet :: Snake : ____

- (A) Roar
- (B) Bark
- (C) Moo
- (D) Hiss

Q9. Choose the best analogy:

5 : 125 :: 4 : ____

- (A) 16
- (B) 64
- (C) 256
- (D) 48

Q10. Choose the best analogy:

Stethoscope : Doctor :: Scalpel : ____

- (A) Surgeon
- (B) Nurse
- (C) Patient
- (D) Pharmacist

Q11. Choose the best analogy:

Farmer : Field :: Sailor : ____

- (A) River



- (B) Boat
- (C) Sea
- (D) Fish

Q12. Choose the best analogy:

Leather : Shoes :: Wood : ____

- (A) Tree
- (B) Paper
- (C) Plank
- (D) Furniture

Q13. Choose the best analogy:

Sun : Light :: Coal : ____

- (A) Fire
- (B) Heat
- (C) Smoke
- (D) Ash

Q14. Choose the best analogy:

Paddy : Rice :: Sugarcane : ____

- (A) Sugar
- (B) Jaggery
- (C) Molasses
- (D) Syrup

Q15. In a certain code, **ACE** is written as **DFH**. Using the same rule, how is **HIT** written?

- (A) JLV
- (B) KMW



(C) K LW

(D) J KW

Q16. In a certain code, **STAR** is written as **RATS**. Using the same rule, how is **MOOD** written?

(A) M ID O

(B) D O M E

(C) O D M O

(D) D O O M

Q17. In a certain code, **ROSE** is written as **ESOR**. Using the same rule, how is **LAMP** written?

(A) L A M P

(B) P M A L

(C) M A P L

(D) P A L P

Q18. Using the code $A = 1$, $B = 2$, $C = 3$, ..., $Z = 26$, what is the numerical code for the word **FACE**?

(A) 6 1 3 5

(B) 5 1 3 6

(C) 6 1 5 3

(D) 1 3 6 5

Q19. In a certain code, each **consonant** is replaced by the letter that comes immediately **after** it in the alphabet, and **vowels are dropped**. Using this rule, what is the code for **CAT**?

(A) D A T

(B) C B U



(C) DU

(D) CU

Q20. A code is formed by writing only the letters at **odd positions** (1st, 3rd, 5th, ...) of the original word. What is the code for **MARBLE**?

(A) MAR

(B) ABE

(C) MBE

(D) MRL

Q21. Find the **odd one out**:

Cricket, Football, Badminton, Chess

(A) Cricket

(B) Chess

(C) Football

(D) Badminton

Q22. Find the **odd one out**:

4, 8, 16, 36, 64

(A) 36

(B) 8

(C) 16

(D) 64

Q23. Find the **odd one out**:

Kidney, Liver, Pancreas, Cerebellum

(A) Kidney

(B) Liver

(C) Cerebellum



(D) Pancreas

Q24. Find the odd one out:

Iron, Gold, Silver, Wood

(A) Iron

(B) Gold

(C) Silver

(D) Wood

Q25. Find the odd one out:

Sitar, Tabla, Mridanga, Dholak

(A) Tabla

(B) Sitar

(C) Mridanga

(D) Dholak

Q26. Find the odd one out:

Blue, Green, Orange, Purple

(A) Blue

(B) Green

(C) Orange

(D) Purple

Q27. Statements:

All boys play cricket.

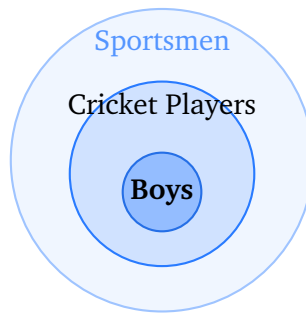
All cricket players are sportsmen.

Conclusions:

I. All boys are sportsmen.

II. Some sportsmen are boys.





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

Q28. Statements:

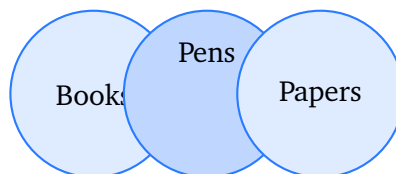
Some books are pens.

Some pens are papers.

Conclusions:

I. Some books are papers.

II. All papers are pens.



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

Q29. Statements:

Some fruits are vegetables.

All vegetables are nutritious.

Conclusions:



- I. All fruits are nutritious.
- II. Some fruits are nutritious.

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

Q30. Statements:

All tables are chairs.
No chair is red.

Conclusions:

- I. No table is red.
- II. All chairs are tables.

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

Q31. Statements:

All kings are warriors.
All warriors are brave.

Conclusions:

- I. All kings are brave.
- II. Some brave people are kings.

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

Q32. Meena's mother's mother is Kamla. What is Kamla to Meena?



- (A) Mother
- (B) Aunt
- (C) Sister
- (D) Grandmother

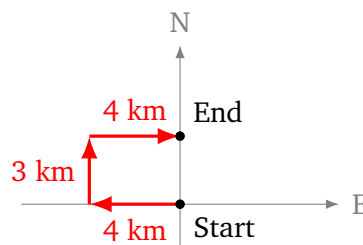
Q33. Raj's sister's son is Arjun. What is Arjun to Raj?

- (A) Son
- (B) Nephew
- (C) Brother
- (D) Cousin

Q34. Priya's husband is Anil. Anil's brother is Suresh. What is Suresh to Priya?

- (A) Brother-in-law
- (B) Uncle
- (C) Cousin
- (D) Father-in-law

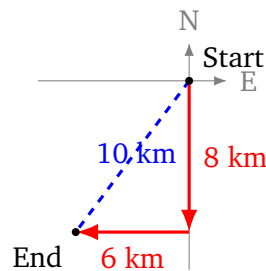
Q35. A man starts from a point, walks **4 km West**, then **3 km North**, then **4 km East**. In which direction is he now **from his starting point**?



- (A) South
- (B) East
- (C) North
- (D) West

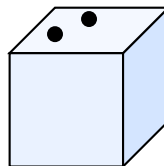


Q36. A girl starts from a point, walks **8 km South**, then **6 km West**. How far is she **from her starting point**?



- (A) 14 km
- (B) 12 km
- (C) 8 km
- (D) 10 km

Q37. On a standard die, the sum of **opposite faces** is always 7. If the **top face** shows **2**, what number is on the **bottom face**?

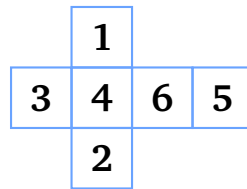


Top face = 2; Bottom face = ?

- (A) 4
- (B) 5
- (C) 6
- (D) 1

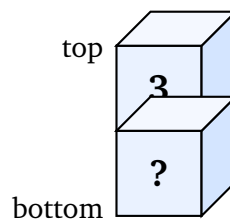
Q38. A cross-shaped die net is shown below. When folded into a cube, which face is **opposite** to face 4?





- (A) 5
- (B) 3
- (C) 6
- (D) 1

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 3, what number appears on the **bottom face of the lower die**?



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

Q40. Study the figure matrix below and identify the missing figure (?):

○	○○	○○○
□	□□	□□□
△	△△	?

- (A) △



(B) □ □ □

(C) ○ ○ ○

(D) △ △ △



Detailed Solutions

Q1.

Solution

Concept — Number Series with Increasing Gaps: The differences between consecutive terms themselves form a sequence that increases by a fixed amount each time.

Step 1 — Find the pattern of differences:

$$100 \xrightarrow{-5} 95 \xrightarrow{-10} 85 \xrightarrow{-15} 70 \xrightarrow{-20} 50 \xrightarrow{-25} \boxed{25}$$

The gaps are $-5, -10, -15, -20, -25, \dots$ (decreasing by 5 each step). The next gap is -25 , giving $50 - 25 = 25$.

Why other options are wrong:

- Option A (20): Assumes a gap of -30 , which skips a step.
- Option C (30): Assumes a gap of -20 , which does not continue the increasing-gap pattern.
- Option D (35): Assumes a gap of -15 , which is a decreasing gap instead of increasing.

Final Answer: $50 - 25 = 25 \Rightarrow \boxed{B}$

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

Q2.

Solution

Concept — Letter Series with Increasing Position Gaps: Letters are selected from the alphabet at positions that increase by 1 more than the previous gap.

Step 1 — Assign alphabet positions and find gaps:

$$A(1) \xrightarrow{+2} C(3) \xrightarrow{+3} F(6) \xrightarrow{+4} J(10) \xrightarrow{+5} O(15) \xrightarrow{+6} U(21)$$

The gaps are $+2, +3, +4, +5, +6, \dots$. The next gap is $+6$. Position $15 + 6 = 21$, and the 21st letter is U.

Why other options are wrong:

- Option B (T): T is at position 20, which would require a gap of only $+5$ (repeating the previous gap).



- Option C (V): V is at position 22, requiring a gap of +7 (too large).
- Option D (W): W is at position 23, requiring a gap of +8 (skips the pattern).

Final Answer: Position $15 + 6 = 21 \Rightarrow U \Rightarrow \boxed{A}$

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

Q3.

Solution

Concept — Series with Progressive Differences: The differences between consecutive terms increase by 1 each time.

Step 1 — List the first differences:

$$1 \xrightarrow{+1} 2 \xrightarrow{+2} 4 \xrightarrow{+3} 7 \xrightarrow{+4} 11 \xrightarrow{+5} 16 \xrightarrow{+6} \boxed{22}$$

First differences: 1, 2, 3, 4, 5, 6, ... The next difference is 6, giving $16 + 6 = 22$.

Why other options are wrong:

- Option A (20): Implies a difference of 4 (not increasing from 5).
- Option B (21): Implies a difference of 5 (repeats the previous difference instead of increasing it).
- Option D (24): Implies a difference of 8 (skips 6 and 7).

Final Answer: $16 + 6 = 22 \Rightarrow \boxed{C}$

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

Q4.

Solution

Concept — Squares of Prime Numbers: Each term in the series is the square of a successive prime number.

Step 1 — Identify the pattern:

$$2^2 = 4, \quad 3^2 = 9, \quad 5^2 = 25, \quad 7^2 = 49, \quad 11^2 = 121, \quad 13^2 = \boxed{169}$$

The primes are 2, 3, 5, 7, 11, 13, ... The next prime after 11 is 13, and $13^2 = 169$.

Why other options are wrong:



- Option A (144): $144 = 12^2$, but 12 is not a prime number.
- Option B (156): Not a perfect square of any integer.
- Option C (164): Not a perfect square of any integer.

Final Answer: $13^2 = 169 \Rightarrow \boxed{D}$

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

Q5.

Solution

Concept — Alternating Operations ($\times 2$ then -1): Two interleaved operations are applied alternately to generate the series.

Step 1 — Trace the operations:

$$5 \xrightarrow{\times 2} 10 \xrightarrow{-1} 9 \xrightarrow{\times 2} 18 \xrightarrow{-1} 17 \xrightarrow{\times 2} 34 \xrightarrow{-1} 33 \xrightarrow{\times 2} \boxed{66}$$

The pattern alternates: multiply by 2, then subtract 1. After 33, the next operation is $\times 2$, giving $33 \times 2 = 66$.

Why other options are wrong:

- Option A (64): $33 \times 2 - 2 = 64$; incorrectly subtracts 2 instead of multiplying.
- Option C (68): Adding 35 to 33; no such consistent rule.
- Option D (70): Adding 37 to 33; breaks the alternating pattern.

Final Answer: $33 \times 2 = 66 \Rightarrow \boxed{B}$

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

Q6.

Solution

Concept — Fibonacci Series: Each term is the sum of the two immediately preceding terms.

Step 1 — Apply the rule:

$$0, 1, 1, 2, 3, 5, 8, 13, \underbrace{8 + 13}_{=21}$$

The two preceding terms are 8 and 13; their sum is $8 + 13 = 21$.



Why other options are wrong:

- Option B (19): $19 \neq 8 + 13$; no Fibonacci justification.
- Option C (20): Off by 1 from the correct Fibonacci value.
- Option D (22): Off by 1 from the correct Fibonacci value.

Final Answer: $8 + 13 = 21 \Rightarrow \boxed{A}$

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

Q7.

Solution

Concept — Oblong (Pronic) Numbers $n(n+1)$: Each term equals the product of two consecutive natural numbers.

Step 1 — Identify the factors:

$$1 \times 2 = 2, \quad 2 \times 3 = 6, \quad 3 \times 4 = 12, \quad 4 \times 5 = 20, \quad 5 \times 6 = 30, \quad 6 \times 7 = \boxed{42}$$

The pattern is $n(n+1)$ for $n = 1, 2, 3, \dots$. The next term uses $n = 6$: $6 \times 7 = 42$.

Why other options are wrong:

- Option A (38): $38 = 2 \times 19$; not of the form $n(n+1)$ for consecutive n .
- Option B (40): $40 = 5 \times 8$; not of the form $n(n+1)$ for consecutive n .
- Option D (44): $44 = 4 \times 11$; not of the form $n(n+1)$ for consecutive n .

Final Answer: $6 \times 7 = 42 \Rightarrow \boxed{C}$

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

Q8.

Solution

Concept — Animal : Sound Analogy: The relationship is “animal to its characteristic sound.”

Step 1 — Identify the base relationship: An Elephant produces the sound called a *Trumpet*. A Snake produces the sound called a *Hiss*.

Why other options are wrong:

- Option A (Roar): Sound made by a Lion, not a Snake.



- Option B (Bark): Sound made by a Dog, not a Snake.
- Option C (Moo): Sound made by a Cow, not a Snake.

Final Answer: Snake : Hiss $\Rightarrow$ D

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

Q9.

Solution

Concept — Cube of a Number Analogy: The relationship is “number to its cube.”

Step 1 — Verify the base pair and apply: $5^3 = 125$ (given). Applying the same rule: $4^3 = 4 \times 4 \times 4 = 64$.

Why other options are wrong:

- Option A (16): $16 = 4^2$; this is the *square* of 4, not the cube.
- Option C (256): $256 = 4^4$; this is the fourth power, not the cube.
- Option D (48): $48 = 4 \times 12$; no consistent mathematical rule.

Final Answer: $4^3 = 64 \Rightarrow$ B

Answer: (B) [Go Back to Q 9](#)

Q10.

Solution

Concept — Tool : Professional Analogy: The relationship is “diagnostic/surgical tool to the specialist who uses it.”

Step 1 — Identify the base relationship: A *Stethoscope* is the primary diagnostic tool of a *Doctor*. A *Scalpel* is the primary surgical tool of a *Surgeon*.

Why other options are wrong:

- Option B (Nurse): Nurses assist but do not primarily use scalpels for surgery.
- Option C (Patient): A patient is the recipient of the scalpel, not the professional who uses it.
- Option D (Pharmacist): A pharmacist dispenses medicine and does not use a scalpel.

Final Answer: Scalpel : Surgeon $\Rightarrow$ A



Answer: (A) [Go Back to Q 10](#)

Q11.

Solution

Concept — Occupation : Primary Workplace Analogy: The relationship is “worker to the place where they carry out their primary work.”

Step 1 — Identify the base relationship: A *Farmer* primarily works in a *Field*. A *Sailor* primarily works at *Sea*.

Why other options are wrong:

- Option A (River): Rivers are freshwater bodies; sailors work on the sea/ocean.
- Option B (Boat): A boat is the *vehicle* a sailor uses, not their workplace environment.
- Option D (Fish): Fish is what a fisherman catches; it is not a place of work.

Final Answer: Sailor : Sea $\Rightarrow$ C

Answer: (C) [Go Back to Q 11](#)

Q12.

Solution

Concept — Raw Material : Final Product Analogy: The relationship is “primary material to the main finished product made from it.”

Step 1 — Identify the base relationship: *Leather* is the raw material used to make *Shoes*. *Wood* is the raw material primarily used to make *Furniture*.

Why other options are wrong:

- Option A (Tree): A tree is the *source* of wood, not a product made from wood.
- Option B (Paper): Paper is made from wood pulp, but it is a less direct and specific product compared to furniture.
- Option C (Plank): A plank is an *intermediate form* of wood, not a finished product.

Final Answer: Wood : Furniture $\Rightarrow$ D

Answer: (D) [Go Back to Q 12](#)



Q13.

Solution

Concept — Source : Primary Energy Output Analogy: The relationship is “energy source to the primary form of energy it provides.”

Step 1 — Identify the base relationship: The *Sun* is the primary source of *Light* (and heat, but light is the defining output in the context of this analogy). *Coal* is the primary source of *Heat* when burned.

Why other options are wrong:

- Option A (Fire): Fire is the *process* of burning coal, not the energy output.
- Option C (Smoke): Smoke is a by-product of combustion, not the primary energy output.
- Option D (Ash): Ash is the solid residue after burning, not an energy form.

Final Answer: Coal : Heat $\Rightarrow$ B

Answer: (B) [Go Back to Q 13](#)

Q14.

Solution

Concept — Raw Crop : Refined Food Product Analogy: The relationship is “raw agricultural crop to its primary refined food product.”

Step 1 — Identify the base relationship: *Paddy* (raw rice crop) is processed to give *Rice*. *Sugarcane* is processed (crystallised) to give *Sugar*.

Why other options are wrong:

- Option B (Jaggery): Jaggery is made from sugarcane but is an unrefined product; the direct refined product is sugar.
- Option C (Molasses): Molasses is a by-product of the sugar-refining process, not the main product.
- Option D (Syrup): Syrup is a stage in processing, not the final crystallised product.

Final Answer: Sugarcane : Sugar $\Rightarrow$ A

Answer: (A) [Go Back to Q 14](#)



Q15.

Solution

Concept — Letter Shift Coding (+3): Each letter in the word is replaced by the letter 3 positions ahead in the alphabet.

Step 1 — Verify the rule with the given pair: $A \rightarrow D (+3)$, $C \rightarrow F (+3)$, $E \rightarrow H (+3)$. Confirmed: $ACE \rightarrow DFH$.

Step 2 — Apply to HIT: $H(8) \rightarrow K(11)$, $I(9) \rightarrow L(12)$, $T(20) \rightarrow W(23)$.
Code for HIT = **KLW**.

Why other options are wrong:

- Option A (JLV): $H \rightarrow J$ is a shift of +2, not +3.
- Option B (KMW): $I \rightarrow M$ is a shift of +4, not +3.
- Option D (JKW): $H \rightarrow J (+2)$ and $I \rightarrow K (+2)$ are both wrong shifts.

Final Answer: HIT $\rightarrow$ KLW $\Rightarrow$

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

Q16.

Solution

Concept — Word Reversal Coding: The code for a word is obtained by spelling the word *backwards*.

Step 1 — Verify with the given pair: STAR reversed = RATS. Confirmed.

Step 2 — Apply to MOOD: M-O-O-D reversed = D-O-O-M = **DOOM**.

Why other options are wrong:

- Option A (MIDO): Not a reversal of MOOD.
- Option B (DOME): D-O-M-E rearranges letters but is not a simple reversal.
- Option C (ODMO): Rearranges letters incorrectly.

Final Answer: MOOD reversed = DOOM $\Rightarrow$

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



Q17.

Solution

Concept — Word Reversal Coding: The code for a word is obtained by spelling the word *backwards*.

Step 1 — Verify with the given pair: ROSE reversed = ESOR. Confirmed.

Step 2 — Apply to LAMP: L-A-M-P reversed = P-M-A-L = **PMAL**.

Why other options are wrong:

- Option A (LAMP): Keeping the word unchanged ignores the reversal rule.
- Option C (MAPL): Partially rearranged but not a complete reversal.
- Option D (PALP): Repeats “P”; not a reversal of LAMP.

Final Answer: LAMP reversed = PMAL $\Rightarrow$ **B**

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

Q18.

Solution

Concept — Positional Alphabet Coding (A=1, B=2, ...): Each letter is replaced by its position number in the English alphabet.

Step 1 — Find positions of each letter in FACE:

F	A	C	E
6	1	3	5

Concatenating: 6, 1, 3, 5 $\rightarrow$ **6135**.

Why other options are wrong:

- Option B (5136): Incorrect order; starts with E's value.
- Option C (6153): Swaps C and E positions (3 and 5 are reversed).
- Option D (1365): Starts with A's value; incorrect order.

Final Answer: F=6, A=1, C=3, E=5 $\rightarrow$ 6135 $\Rightarrow$ **A**

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



Q19.

Solution**Concept — Selective Letter Coding (Consonants Shifted, Vowels Dropped):**

Consonants are replaced by the next letter; vowels are omitted entirely.

Step 1 — Classify each letter in CAT and apply the rule:

- C (consonant) → next letter = D
- A (vowel) → **dropped** (not written)
- T (consonant) → next letter = U

Result: DU.

Why other options are wrong:

- Option A (DAT): Keeps the vowel A and does not shift it; A should be dropped.
- Option B (CBU): Shifts C to C+1=D but writes “CB”; incorrect shift and vowel handling.
- Option D (CU): C is kept unchanged; consonants must be shifted by 1.

Final Answer: CAT → DU ⇒ C**Answer: (C)** [Go Back to Q 19](#)

Q20.

Solution**Concept — Positional Letter Extraction (Odd Positions):** Only the letters at positions 1, 3, 5, ... are extracted and concatenated.**Step 1 — Number each letter of MARBLE:**

Pos	1	2	3	4	5	6
Letter	M	A	R	B	L	E

Step 2 — Extract odd-position letters (1, 3, 5): Position 1 = M, Position 3 = R, Position 5 = L.

Code = MRL.

Why other options are wrong:

- Option A (MAR): Takes positions 1, 2, 3 — includes even position 2.



- Option B (ABE): Takes the letters A (pos 2), B (pos 4), E (pos 6) — all *even* positions.
- Option C (MBE): Takes positions 1 (M), 4 (B), 6 (E) — mixes odd and even positions.

Final Answer: Odd positions of MARBLE $\rightarrow$ M, R, L = MRL $\Rightarrow$ D

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

Q21.

Solution

Concept — Classification (Odd One Out): Three items share a common category; the fourth does not.

Step 1 — Identify the common category:

- Cricket — outdoor field sport
- Football — outdoor field sport
- Badminton — outdoor (or indoor court) sport played with a racket
- Chess — indoor *board game* (not a physically active sport)

Cricket, Football, and Badminton are all *physically active sports*. Chess is a *board game* requiring no physical exertion.

Why other options are wrong:

- Option A (Cricket): Cricket is an outdoor sport, same category as Football and Badminton.
- Option C (Football): Football is an outdoor sport, same category.
- Option D (Badminton): Badminton is an active sport, same category.

Final Answer: Chess is the odd one out $\Rightarrow$ B

Answer: (B) [Go Back to Q 21](#)



Q22.

Solution

Concept — Classification by Mathematical Property (Powers of 2): All members of the set except one are exact powers of 2.

Step 1 — Check each number:

- $4 = 2^2$ ✓
- $8 = 2^3$ ✓
- $16 = 2^4$ ✓
- $36 = 6^2 = 2^2 \times 3^2$ — **NOT a power of 2** ×
- $64 = 2^6$ ✓

36 is not expressible as 2^n for any integer n .

Why other options are wrong:

- Option B (8): $8 = 2^3$; it is a power of 2.
- Option C (16): $16 = 2^4$; it is a power of 2.
- Option D (64): $64 = 2^6$; it is a power of 2.

Final Answer: 36 is not a power of 2 $\Rightarrow$ A

Answer: (A) [Go Back to Q 22](#)

Q23.

Solution

Concept — Classification by Body System: Three organs belong to the abdominal/digestive system; one belongs to the central nervous system.

Step 1 — Classify each organ:

- Kidney — part of the *urinary/excretory* system (abdominal)
- Liver — part of the *digestive/metabolic* system (abdominal)
- Pancreas — part of the *digestive/endocrine* system (abdominal)
- Cerebellum — part of the *brain* (central nervous system, located in the skull)

Cerebellum is the only organ that belongs to the brain/CNS, not the abdomen.

Why other options are wrong:

- Option A (Kidney): Abdominal organ like Liver and Pancreas.
- Option B (Liver): Abdominal organ.



- Option D (Pancreas): Abdominal organ.

Final Answer: Cerebellum is the odd one out ⇒

Answer: (C) [Go Back to Q 23](#)

Q24.

Solution

Concept — Classification by Material Type (Metal vs Non-metal): Three items are metals; one is not.

Step 1 — Classify each item:

- Iron — metal (Fe)
- Gold — metal (Au)
- Silver — metal (Ag)
- Wood — *organic plant material*, not a metal

Iron, Gold, and Silver are all metals. Wood is an organic material derived from trees.

Why other options are wrong:

- Option A (Iron): Iron is a metal.
- Option B (Gold): Gold is a metal.
- Option C (Silver): Silver is a metal.

Final Answer: Wood is not a metal ⇒

Answer: (D) [Go Back to Q 24](#)

Q25.

Solution

Concept — Classification by Instrument Type (String vs Percussion): Three instruments are percussion instruments; one is a string instrument.

Step 1 — Classify each instrument:

- Tabla — percussion (struck with hands)
- Mridanga — percussion (struck with hands)
- Dholak — percussion (struck with hands/sticks)
- Sitar — *string instrument* (plucked strings)



Tabla, Mridanga, and Dholak are all percussion instruments. Sitar is a string instrument.

Why other options are wrong:

- Option A (Tabla): Tabla is a percussion instrument, same category.
- Option C (Mridanga): Mridanga is a percussion instrument, same category.
- Option D (Dholak): Dholak is a percussion instrument, same category.

Final Answer: Sitar (string instrument) is the odd one out $\Rightarrow$ **B**

Answer: (B) [Go Back to Q 25](#)

Q26.

Solution

Concept — Classification by Colour Type (Primary vs Secondary): In the RYB colour model, there are three primary colours (Red, Yellow, Blue). Secondary colours are formed by mixing two primary colours.

Step 1 — Classify each colour:

- Blue — *primary* colour
- Green — secondary (Yellow + Blue)
- Orange — secondary (Red + Yellow)
- Purple — secondary (Red + Blue)

Green, Orange, and Purple are all secondary colours. Blue is a primary colour.

Why other options are wrong:

- Option B (Green): Green is a secondary colour (Yellow + Blue).
- Option C (Orange): Orange is a secondary colour (Red + Yellow).
- Option D (Purple): Purple is a secondary colour (Red + Blue).

Final Answer: Blue (primary colour) is the odd one out $\Rightarrow$ **A**

Answer: (A) [Go Back to Q 26](#)



Q27.

Solution

Concept — Syllogism with Universal Affirmative Statements: When “All A are B” and “All B are C,” we can conclude “All A are C” and, by conversion, “Some C are A.”

Step 1 — Draw the logical relationship: Statement 1: All boys play cricket $\Rightarrow$ Boys $\subset$ Cricket Players.

Statement 2: All cricket players are sportsmen $\Rightarrow$ Cricket Players $\subset$ Sportsmen.

Therefore: Boys $\subset$ Cricket Players $\subset$ Sportsmen, so Boys $\subset$ Sportsmen.

Step 2 — Evaluate each conclusion:

- **Conclusion I** (All boys are sportsmen): **TRUE** — follows directly from Boys $\subset$ Sportsmen.
- **Conclusion II** (Some sportsmen are boys): **TRUE** — since all boys are sportsmen, at least some sportsmen are boys (the boys themselves).

Why other options are wrong:

- Option A (Only I): Incomplete — Conclusion II also follows.
- Option B (Only II): Incomplete — Conclusion I also follows.
- Option D (Neither): Both conclusions follow from the given statements.

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

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* establish any direct link between A and C, nor allow a universal conclusion about B.

Step 1 — Analyse each statement: Statement 1: Some books are pens $\Rightarrow$ Books $\cap$ Pens $\neq \emptyset$ (partial overlap).

Statement 2: Some pens are papers $\Rightarrow$ Pens $\cap$ Papers $\neq \emptyset$ (partial overlap).

There is *no* information directly linking Books to Papers.

Step 2 — Evaluate each conclusion:

- **Conclusion I** (Some books are papers): **CANNOT be concluded** — Books



and Papers may be entirely separate sets; only Pens links them, and only partially.

- **Conclusion II** (All papers are pens): **CANNOT be concluded** — Statement 2 only says “Some pens are papers,” not “All papers are pens.”

Why other options are wrong:

- Option A (Only I): Conclusion I is not definitively true.
- Option B (Only II): Conclusion II is a universal claim not supported by a particular statement.
- Option C (Both I and II): Neither conclusion can be definitively drawn.

Final Answer: Neither conclusion follows $\Rightarrow$ **D**

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

Q29.

Solution

Concept — Syllogism (Particular + Universal Statements): When “Some A are B” and “All B are C,” we can conclude “Some A are C” but *not* “All A are C.”

Step 1 — Analyse the statements: Statement 1: Some fruits are vegetables $\Rightarrow$ Fruits $\cap$ Vegetables $\neq \emptyset$.

Statement 2: All vegetables are nutritious $\Rightarrow$ Vegetables $\subset$ Nutritious.

Combining: the fruits that are also vegetables are nutritious. Hence *some* fruits are nutritious.

Step 2 — Evaluate each conclusion:

- **Conclusion I** (All fruits are nutritious): **FALSE** — only *some* fruits (those that are vegetables) are guaranteed to be nutritious.
- **Conclusion II** (Some fruits are nutritious): **TRUE** — follows directly from the combination above.

Why other options are wrong:

- Option A (Only I): Conclusion I is too strong and not valid.
- Option C (Both): Conclusion I does not follow.
- Option D (Neither): Conclusion II does follow.

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

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



Q30.

Solution

Concept — Syllogism with Universal Affirmative + Universal Negative: “All A are B” and “No B is C” together imply “No A is C.” The converse “All B are A” is not valid.

Step 1 — Analyse the statements: Statement 1: All tables are chairs $\Rightarrow$ Tables $\subset$ Chairs.

Statement 2: No chair is red $\Rightarrow$ Chairs $\cap$ Red $= \emptyset$.

Combining: Tables $\subset$ Chairs and Chairs $\cap$ Red $= \emptyset$, so Tables $\cap$ Red $= \emptyset$.

Step 2 — Evaluate each conclusion:

- **Conclusion I** (No table is red): **TRUE** — follows directly from Tables $\subset$ Chairs and no chair being red.
- **Conclusion II** (All chairs are tables): **FALSE** — Statement 1 says all tables are chairs, not all chairs are tables. The subset relationship is one-directional.

Why other options are wrong:

- Option B (Only II): Conclusion II incorrectly reverses the subset relationship.
- Option C (Both): Conclusion II is not valid.
- Option D (Neither): Conclusion I is clearly valid.

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

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

Q31.

Solution

Concept — Syllogism with Two Universal Affirmative Statements: “All A are B” and “All B are C” imply “All A are C” and “Some C are A.”

Step 1 — Analyse the statements: Statement 1: All kings are warriors $\Rightarrow$ Kings $\subset$ Warriors.

Statement 2: All warriors are brave $\Rightarrow$ Warriors $\subset$ Brave.

Therefore: Kings $\subset$ Warriors $\subset$ Brave, so Kings $\subset$ Brave.

Step 2 — Evaluate each conclusion:

- **Conclusion I** (All kings are brave): **TRUE** — Kings $\subset$ Brave.



- **Conclusion II** (Some brave people are kings): **TRUE** — Since all kings are brave, at least some brave people (namely the kings) are kings.

Why other options are wrong:

- Option A (Only I): Incomplete — Conclusion II also follows.
- Option B (Only II): Incomplete — Conclusion I also follows.
- Option D (Neither): Both conclusions are valid.

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

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

Q32.

Solution

Concept — Blood Relations (Two-Generation Trace): Tracing the relationship step by step through each generation.

Step 1 — Trace the chain:

- Meena's **mother** = Meena's parent (one generation above Meena).
- Meena's mother's **mother** = Meena's maternal *grandmother* (two generations above).

So Kamla is Meena's **Grandmother**.

Why other options are wrong:

- Option A (Mother): Mother is only one generation above; Kamla is two generations above.
- Option B (Aunt): An aunt is the mother's or father's sister; no such sibling relationship is mentioned.
- Option C (Sister): Sisters are in the same generation; Kamla is two generations above.

Final Answer: Kamla is Meena's Grandmother $\Rightarrow$ D

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



Q33.

Solution

Concept — Blood Relations (Sibling's Child): A sibling's son is a nephew.

Step 1 — Trace the chain:

- Raj's **sister** — Raj's sibling.
- Raj's sister's **son** = the son of Raj's sibling = Raj's **nephew**.

Why other options are wrong:

- Option A (Son): Arjun is Raj's sister's son, not Raj's own son.
- Option C (Brother): Brothers share parents; Arjun is one generation below Raj.
- Option D (Cousin): Cousins are children of one's parent's siblings; Arjun is Raj's own sister's son.

Final Answer: Arjun is Raj's Nephew ⇒ B

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

Q34.

Solution

Concept — Blood Relations (Spouse's Sibling): A husband's brother is a brother-in-law to the wife.

Step 1 — Trace the chain:

- Priya's husband = Anil.
- Anil's brother = Suresh.
- Suresh is Anil's brother ⇒ Suresh is Priya's **brother-in-law** (husband's brother).

Why other options are wrong:

- Option B (Uncle): Uncle is a parent's sibling; Suresh is the same generation as Anil.
- Option C (Cousin): Cousins are children of a parent's sibling; Suresh is Anil's direct brother.
- Option D (Father-in-law): Father-in-law is the spouse's father; Suresh is Anil's brother, not father.



Final Answer: Suresh is Priya's Brother-in-law $\Rightarrow$ A

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

Q35.

Solution

Concept — Direction Sense (Net Displacement): Calculate the resultant East-West and North-South displacements separately, then determine the direction.

Step 1 — Calculate displacements:

- East-West: 4 km West, then 4 km East $\Rightarrow$ net East-West displacement = 0.
- North-South: 3 km North $\Rightarrow$ net North displacement = 3 km North.

The man ends up **3 km due North** of his starting point.

Step 2 — State the direction: Since the East-West components cancel perfectly, the man is directly **North** of his starting point.

Why other options are wrong:

- Option A (South): He moved North by 3 km; he is North, not South.
- Option B (East): East-West displacement is zero; he is neither East nor West.
- Option D (West): East-West displacement is zero.

Final Answer: He is directly North of the starting point $\Rightarrow$ C

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

Q36.

Solution

Concept — Direction Sense (Straight-Line Distance using Pythagoras): When two displacements are perpendicular, the straight-line distance is found using the Pythagorean theorem.

Step 1 — Identify the right triangle:

- 8 km South (vertical leg)
- 6 km West (horizontal leg)
- These two directions are perpendicular (at 90°).



Step 2 — Apply Pythagoras:

$$d = \sqrt{8^2 + 6^2} = \sqrt{64 + 36} = \sqrt{100} = 10 \text{ km}$$

Why other options are wrong:

- Option A (14 km): $8 + 6 = 14$ is the total *path* distance, not the straight-line distance.
- Option B (12 km): $\sqrt{8^2 + 6^2} \neq 12$.
- Option C (8 km): Only the South component; ignores the West displacement.

Final Answer: $\sqrt{64 + 36} = 10 \text{ km} \Rightarrow \boxed{\text{D}}$

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

Q37.

Solution

Concept — Standard Dice (Opposite Faces Sum to 7): On a standard die, every pair of opposite faces sums to exactly 7: (1, 6), (2, 5), (3, 4).

Step 1 — Apply the rule: Top face = 2. Opposite face (bottom) = $7 - 2 = 5$.

Step 2 — Verify: The three opposite pairs on a standard die are: $1 + 6 = 7$, $2 + 5 = 7$, $3 + 4 = 7$. Since top = 2, bottom = 5. ✓

Why other options are wrong:

- Option A (4): $2 + 4 = 6 \neq 7$; 4 is opposite to 3, not 2.
- Option C (6): $2 + 6 = 8 \neq 7$; 6 is opposite to 1, not 2.
- Option D (1): $2 + 1 = 3 \neq 7$; 1 is opposite to 6, not 2.

Final Answer: $7 - 2 = 5 \Rightarrow \boxed{\text{B}}$

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



Q38.

Solution

Concept — Die Net (Cross-Shaped, Identifying Opposite Faces): In a cross-shaped net with a horizontal strip of four faces, the face two positions away (across the centre face) in the strip is opposite to the centre face when folded.

Step 1 — Read the net layout:

[3] [4] [6] [5] (horizontal strip)

with face 1 above face 4 and face 2 below face 4.

Step 2 — Determine what is opposite to 4: When the net is folded:

- Face 4 becomes the *front*.
- Face 3 (left of 4) folds to become the *left* face.
- Face 6 (right of 4) folds to become the *right* face.
- Face 5 (two steps right of 4, beyond 6) wraps over to become the *back* face, opposite to 4.
- Face 1 (above 4) folds to become the *top* face.
- Face 2 (below 4) folds to become the *bottom* face.

The face opposite to 4 is 5.

Why other options are wrong:

- Option B (3): Face 3 is adjacent to 4 (left face), not opposite.
- Option C (6): Face 6 is adjacent to 4 (right face), not opposite.
- Option D (1): Face 1 is the top face (adjacent to 4), not opposite.

Final Answer: Face opposite to 4 is 5 $\Rightarrow$ A

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

Q39.

Solution

Concept — Stacked Dice (Touching Faces Sum to 7): Each die follows the standard rule that opposite faces sum to 7. The touching (contact) faces of adjacent dice also sum to 7.

Step 1 — Analyse the upper die: Top face of upper die = 3.
Bottom face of upper die = $7 - 3 = 4$ (opposite face rule).



Step 2 — Find the top face of the lower die: Touching faces sum to 7: upper die bottom + lower die top = 7.

$$4 + \text{lower top} = 7 \Rightarrow \text{lower top} = 3.$$

Step 3 — Find the bottom face of the lower die: Bottom face of lower die = 7 – lower top = 7 – 3 = 4.

Why other options are wrong:

- Option A (3): This is the top face of the upper die, not the bottom of the lower die.
- Option B (6): Does not follow from the chain of opposite-face and touching-face rules.
- Option D (5): Incorrect application of the rules.

Final Answer: Bottom face of lower die = 4 $\Rightarrow$ C

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

Q40.

Solution

Concept — Figure Matrix (Row and Column Patterns): In a 3×3 figure matrix, each row uses the same shape and each column increases the count of that shape by 1.

Step 1 — Identify the row pattern (shape type):

- Row 1 (top): circles (○)
- Row 2 (middle): squares (□)
- Row 3 (bottom): triangles (△)

Step 2 — Identify the column pattern (count):

- Column 1: 1 shape
- Column 2: 2 shapes
- Column 3: 3 shapes

Step 3 — Determine the missing cell (Row 3, Column 3): Row 3 uses triangles; Column 3 requires 3 shapes. Missing figure = **3 triangles** (△ △ △).

Why other options are wrong:

- Option A (△): Only 1 triangle — matches column 1, not column 3.



- Option B ($\square \square \square$): Three squares — wrong shape for Row 3 (squares are in Row 2).
- Option C ($\circ \circ \circ$): Three circles — wrong shape for Row 3 (circles are in Row 1).

Final Answer: Three triangles ($\triangle \triangle \triangle$) $\Rightarrow$ D

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



Answer Key

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

