RIE CEE Reasoning Ability

Sample Paper – 3

Duration: 45 Minutes **Maximum Marks: 60**

Instructions

- This paper contains **30** Multiple Choice Questions (Single Correct Answer), modelled on the **Reasoning Ability** section of the **RIE CEE** (NCERT Regional Institutes of Education Common Entrance Exam).
- Each correct answer carries **+2 marks**. There is a penalty of -0.5 **mark** for every incorrect answer. Unattempted questions carry **0 marks**.
- Only **one** option is correct. Choose carefully before marking, since wrong answers are penalised.
- The actual exam is a **Computer Based Test (CBT)**; attempt this paper in one timed sitting of 45 minutes.
- Use of mobile phones, calculators, or electronic gadgets is not permitted.

Q1. Find the next term in the series: $1,\ 8,\ 27,\ 64,\ 125,\ ?$

(A) 216

(B) 196

(C) 225

(D) 200

Q2. Find the next term in the series: $4,\ 6,\ 9,\ 14,\ 21,\ ?$

(A) 28

(B) 30

(C) 34

(D) 32

Q3. Find the next term in the letter series: $B,\ E,\ H,\ K,\ ?$

(A) M

(B) N

(C) O

(D) L

Q4. Find the next term in the series: $4,\ 9,\ 19,\ 39,\ 79,\ ?$

(A) 149

(B) 158

(C) 159

(D) 160

Q5. Find the next term in the series: $A1,\ F2,\ K4,\ P8,\ ?$

(A) U8

(B) U16

(C) V16

(D) T16

Q6. $4 : 64 :: 6 :?$

(A) 36

(B) 196

(C) 216

(D) 144

Q7. If $PEN : NCL$, then $DESK :?$

(A) BCQI

(B) BCQJ

(C) CCQI

(D) BDQI

Q8. Flute is to Flautist as Violin is to:

(A) Pianist

(B) Drummer

(C) Guitarist

(D) Violinist

Q9. Choose the number that does not belong with the others: $21,\ 28,\ 42,\ 50,\ 56$

(A) 42

(B) 50

(C) 28

(D) 56

Q10. Choose the odd letter pair:

(A) BD

(B) FH

(C) JL

(D) NQ

Q11. Choose the word that does not belong with the others:

(A) Oxygen

(B) Iron

(C) Copper

(D) Gold

Q12. In a certain code, letters are shifted four places forward. How is $KING$ written in that code?

(A) OMSK

(B) NMRK

(C) OMRK

(D) OMRL

Q13. If each letter is coded by its position in the English alphabet, then $LAMP$ is coded as:

(A) 12-1-13-15

(B) 11-1-13-16

(C) 12-1-12-16

(D) 12-1-13-16

Q14. In a code language each letter is replaced by the letter three places before it. How is $WATER$ written in this code?

(A) TXQAO

(B) TXQBO

(C) TWQBO

(D) UXQBO

Q15. Pointing to a woman, Suresh said, "She is the mother of my daughter's brother." How is the woman related to Suresh?

(A) Wife

(B) Sister

(C) Mother

(D) Daughter

Q16. P is the son of Q. R is the father of Q. S is the wife of R. How is S related to P?

(A) Mother

(B) Aunt

(C) Grandmother

(D) Sister

Q17. Meena said, "This man is the husband of the sister of my father." How is the man related to Meena?

(A) Father

(B) Brother

(C) Cousin

(D) Uncle

Q18. Statements: All roses are flowers. All flowers are plants.
Conclusions: I. All roses are plants. II. Some plants are roses.

(A) Only I follows

(B) Both I and II follow

(C) Only II follows

(D) Neither I nor II follows

Q19. Statements: Some chairs are wooden. All wooden things are heavy.
Conclusions: I. Some chairs are heavy. II. All heavy things are chairs.

(A) Both I and II follow

(B) Only II follows

(C) Only I follows

(D) Neither I nor II follows

Q20. Statements: No student is a player. All players are athletes.
Conclusions: I. Some athletes are not students. II. No student is an athlete.

(A) Only I follows

(B) Only II follows

(C) Both I and II follow

(D) Neither I nor II follows

Q21. Statement: The city is facing an acute shortage of drinking water this summer.
Courses of action: I. The municipal body should supply water through tankers in affected areas. II. People should be advised to use water carefully and avoid wastage.

(A) Only I follows

(B) Only II follows

(C) Neither I nor II follows

(D) Both I and II follow

Q22. Statement: "Join our coaching institute to guarantee your success in the entrance examination." — an advertisement.
Assumptions: I. Students wish to succeed in the entrance examination. II. Coaching can help students prepare better.

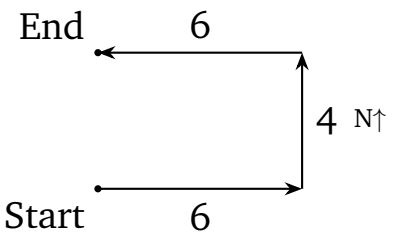
(A) Only I is implicit

(B) Both I and II are implicit

(C) Only II is implicit

(D) Neither I nor II is implicit

Q23. A man walks 6 m East, then turns left and walks 4 m North, then turns left again and walks 6 m West. How far and in which direction is he now from the starting point?



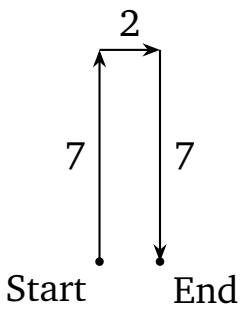
(A) 6 m North

(B) 6 m East

(C) 4 m North

(D) 10 m North

Q24. A boy walks 7 m North, turns right and walks 2 m East, then turns right and walks 7 m South. How far is he from the starting point and in which direction?



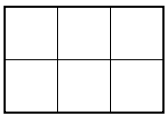
(A) 7 m East

(B) 2 m East

(C) 9 m East

(D) 2 m West

Q25. How many squares are there in the figure given below?



(A) 6

(B) 9

(C) 10

(D) 8

Q26. The arrow rotates clockwise by a fixed angle each step, starting from East. Which direction should the arrow point in the next figure?

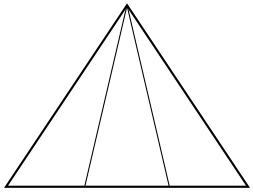
(A) ↑ (points North)

(B) ↓ (points South)

(C) → (points East)

(D) ← (points West)

Q27. How many triangles are there in the figure given below? (A triangle with two cevians drawn from the apex to the base.)



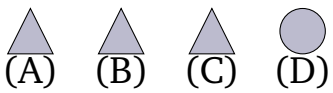
(A) 4

(B) 5

(C) 6

(D) 7

Q28. Choose the figure that is different from the other three.



(A) Figure A

(B) Figure B

(C) Figure C

(D) Figure D

Q29. Five people J, K, L, M and N are sitting in a row facing North. K is at the extreme right end. L is sitting immediately to the left of K. M is at the extreme left end. J is sitting immediately to the right of M. Who is sitting exactly in the middle of the row?

(A) J

(B) N

(C) L

(D) M

Q30. In a class of 28 students, Anil's rank is 9th from the top. What is his rank from the bottom?

(A) 20th

(B) 19th

(C) 21st

(D) 18th

Detailed Solutions

Q1.

Solution

Concept — Number series (perfect cubes): Check whether each term is the cube of a counting number.

Step 1 — Match the cubes: $1 = 1^3$, $8 = 2^3$, $27 = 3^3$, $64 = 4^3$, $125 = 5^3$.

Step 2 — Identify the pattern: The terms are the cubes of $1, 2, 3, 4, 5$ in order.

Step 3 — Find the next term: The next cube is $6^3 = 216$.

Why other options are wrong:

- 196 is 14^2 and 225 is 15^2 — both are squares, not cubes.
- 200 is not a perfect cube at all.

Final Answer: The next term is $216 \Rightarrow$ A

Answer: (A) Go Back to Q1

Q2.

Solution

Concept — Number series (add consecutive primes): When differences grow, check whether they are the prime numbers in order.

Step 1 — Write the differences: $6 - 4 = 2$, $9 - 6 = 3$, $14 - 9 = 5$, $21 - 14 = 7$.

Step 2 — Spot the pattern: The differences are $2, 3, 5, 7$ — the consecutive prime numbers.

Step 3 — Find the next difference: The next prime after 7 is 11.

Step 4 — Add to the last term: $21 + 11 = 32$.

Why other options are wrong:

- 28 adds 7 again; 30 adds 9 (not prime); 34 adds 13 (skips the prime 11).

Final Answer: The next term is $32 \Rightarrow$ D

Answer: (D) Go Back to Q2

Q3.

Solution

Concept — Letter series (constant gap): Convert letters to alphabet positions and find the common gap.

Step 1 — Positions: $B = 2$, $E = 5$, $H = 8$, $K = 11$.

Step 2 — Gaps: $5 - 2 = 3$, $8 - 5 = 3$, $11 - 8 = 3$. The gap is a constant $+3$.

Step 3 — Next letter: $11 + 3 = 14 = N$.

Why other options are wrong:

- M (13) uses a gap of 2; L (12) a gap of 1; O (15) a gap of 4.

Final Answer: The next letter is $N \Rightarrow$ B

Answer: (B) Go Back to Q3

Q4.

Solution

Concept — Number series (multiply and add): Test a rule of the form "previous $\times 2 + 1$" when terms slightly more than double.

Step 1 — Test the rule: $4 \times 2 + 1 = 9$; $9 \times 2 + 1 = 19$; $19 \times 2 + 1 = 39$; $39 \times 2 + 1 = 79$.

Step 2 — The rule holds: Each term is (previous $\times 2$) $+ 1$.

Step 3 — Apply to the last term: $79 \times 2 + 1 = 158 + 1 = 159$.

Why other options are wrong:

- 158 is 79×2 (forgets the $+1$); 149 and 160 break the established rule.

Final Answer: The next term is $159 \Rightarrow$ C

Answer: (C) Go Back to Q4

Q5.

Solution

Concept — Alphanumeric series: Treat the letter part and the number part as two separate series.

Step 1 — Letters: A, F, K, P increase by 5 each time ($A \to F \to K \to P$), so the next letter is U.

Step 2 — Numbers: $1, 2, 4, 8$ double each time, so the next number is 16.

Step 3 — Combine: The next term is $U16$.

Why other options are wrong:

- U8 keeps the old number; V16 and T16 use the wrong letter.

Final Answer: The next term is $U16 \Rightarrow$ B

Answer: (B) Go Back to Q5

Q6.

Solution

Concept — Number analogy (cube): Find the rule connecting the first pair, then apply it to the second.

Step 1 — Rule: $4^3 = 64$, so the rule is "cube the number".

Step 2 — Apply: For 6: $6^3 = 216$.

Why other options are wrong:

- 36 is 6^2; 144 is 12^2; 196 is 14^2 — all squares, not cubes.

Final Answer: $6 : 216 \Rightarrow$ C

Answer: (C) Go Back to Q6

Q7.

Solution

Concept — Letter analogy (shift): Compare each letter's position shift between the two words.

Step 1 — Find the shift: $P \to N$ (-2), $E \to C$ (-2), $N \to L$ (-2). The rule is -2 to each letter.

Step 2 — Apply to DESK: $D \to B$, $E \to C$, $S \to Q$, $K \to I$, giving $BCQI$.

Why other options are wrong:

- BCQJ, CCQI and BDQI each shift one letter by the wrong amount.

Final Answer: $DESK \to BCQI \Rightarrow$ A

Answer: (A) Go Back to Q7

Q8.

Solution

Concept — Word analogy (instrument : player): Match the musical instrument to the name of the person who plays it.

Step 1 — First pair: A flute is played by a flautist.

Step 2 — Apply: A violin is played by a violinist.

Why other options are wrong:

- A pianist plays the piano, a drummer the drums and a guitarist the guitar — none plays the violin.

Final Answer: Violin is to Violinist $\Rightarrow$ D

Answer: (D) Go Back to Q8

Q9.

Solution

Concept — Classification of numbers: Look for a single property shared by all but one.

Step 1 — Test multiples of 7: $21 = 7 \times 3$, $28 = 7 \times 4$, $42 = 7 \times 6$, $56 = 7 \times 8$.

Step 2 — Check 50: $50 = 7 \times 7 + 1$, so 50 is not a multiple of 7.

Step 3 — Conclusion: 50 is the odd one out.

Why other options are wrong:

- 21, 28 and 56 are all multiples of 7, so they belong together.

Final Answer: 50 does not belong $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) Go Back to Q9

Q10.

Solution

Concept — Letter-pair classification: Find the gap between the two letters of each pair.

Step 1 — Gaps: BD: $B(2) \rightarrow D(4)$, gap 2. FH: gap 2. JL: gap 2. NQ: $N(14) \rightarrow Q(17)$, gap 3.

Step 2 — Conclusion: Three pairs have a gap of 2; NQ has a gap of 3, so it is the odd one.

Why other options are wrong:

- BD, FH and JL all have a gap of 2 between the letters.

Final Answer: NQ is the odd pair $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q10

Q11.

Solution

Concept — Word classification: Group the items by category and find the outsider.

Step 1 — Identify the items: Iron, Copper and Gold are all metals.

Step 2 — The outsider: Oxygen is a non-metal (a gas), not a metal.

Why other options are wrong:

- Iron, Copper and Gold share the category "metal".

Final Answer: Oxygen does not belong $\Rightarrow$ A

Answer: (A) Go Back to Q11

Q12.

Solution

Concept — Coding by letter shift: Each letter moves four places forward in the alphabet.

Step 1 — Apply the $+4$ shift: $K \to O$, $I \to M$, $N \to R$, $G \to K$.

Step 2 — Write the code: $KING$ becomes $OMRK$.

Why other options are wrong:

- OMSK shifts N to S $(+5)$; NMRK shifts K to N $(+3)$; OMRL shifts G to L $(+5)$.

Final Answer: $KING \to OMRK \Rightarrow$ C

Answer: (C) Go Back to Q12

Q13.

Solution

Concept — Positional coding: Replace each letter by its position number ($A = 1, B = 2, \ldots, Z = 26$).

Step 1 — Decode each letter: $L = 12$, $A = 1$, $M = 13$, $P = 16$.

Step 2 — Write the code: $LAMP = 12\text{-}1\text{-}13\text{-}16$.

Why other options are wrong:

- 12-1-13-15 puts $P = 15$; 11-1-13-16 puts $L = 11$; 12-1-12-16 puts $M = 12$.

Final Answer: $LAMP = 12\text{-}1\text{-}13\text{-}16 \Rightarrow$ D

Answer: (D) Go Back to Q13

Q14.

Solution

Concept — Coding by fixed shift: Each letter is replaced by the letter three places before it (-3 shift).

Step 1 — Apply the -3 shift: $W \to T$, $A \to X$ (wrapping back from A), $T \to Q$, $E \to B$, $R \to O$.

Step 2 — Write the code: $WATER$ becomes $TXQBO$.

Why other options are wrong:

- TXQAO shifts E to A; TWQBO shifts A to W; UXQBO shifts W to U.

Final Answer: $WATER \to TXQBO \Rightarrow$ B

Answer: (B) Go Back to Q14

Q15.

Solution

Concept — Blood relations (work inwards): Break the statement into small steps, starting from the innermost phrase.

Step 1 — "my daughter's brother": The brother of Suresh's daughter is Suresh's son.

Step 2 — "the mother of (my son)": The mother of Suresh's son is Suresh's wife.

Why other options are wrong:

- Sister, Mother and Daughter do not match "the mother of Suresh's own child".

Final Answer: The woman is Suresh's wife $\Rightarrow$ A

Answer: (A) Go Back to Q15

Q16.

Solution

Concept — Blood relations (build the tree): Lay out each clue as a link in a family tree.

Step 1 — Note the links: P is the son of Q, so Q is P's parent. R is the father of Q, so R is P's grandfather. S is the wife of R, so S is P's grandmother.

Step 2 — Relate S to P: S is the wife of P's grandfather, i.e. P's grandmother.

Why other options are wrong:

- Mother and Aunt are one generation too close; Sister is the same generation as P.

Final Answer: S is P's grandmother $\Rightarrow$ C

Answer: (C) Go Back to Q16

Q17.

Solution

Concept — Blood relations (decode the phrase): Resolve "sister of my father" first.

Step 1 — "sister of my father": The sister of Meena's father is Meena's aunt.

Step 2 — "husband of (my aunt)": The husband of Meena's aunt is Meena's uncle.

Why other options are wrong:

- Father and Brother are wrong relations; Cousin is the next generation, not the man himself.

Final Answer: The man is Meena's uncle $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q17

Q18.

Solution

Concept — Syllogism (chain rule): "All A are B" plus "All B are C" gives "All A are C".

Step 1 — Conclusion I: All roses are flowers and all flowers are plants, so all roses are plants. I follows.

Step 2 — Conclusion II: If all roses are plants, then those roses are plants, so some plants are roses. II follows (valid conversion of "all").

Why other options are wrong:

- Any option dropping I or II is wrong, since both conclusions are valid.

Final Answer: Both I and II follow $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) Go Back to Q18

Q19.

Solution

Concept — Syllogism (some + all): "Some A are B" plus "All B are C" gives "Some A are C".

Step 1 — Conclusion I: Some chairs are wooden, and all wooden things are heavy, so those chairs are heavy. "Some chairs are heavy" follows.

Step 2 — Conclusion II: "All heavy things are chairs" wrongly reverses the relation; many heavy things need not be chairs, so it does not follow.

Why other options are wrong:

- Options including II are wrong because the reverse statement does not follow.

Final Answer: Only I follows $\Rightarrow$ $\boxed{\text{C}}$

Answer: (C) Go Back to Q19

Q20.

Solution

Concept — Syllogism (no + all): Test each conclusion against a valid diagram.

Step 1 — Conclusion I: All players are athletes and no student is a player, so the players (who are athletes) are not students. Hence "some athletes are not students" follows.

Step 2 — Conclusion II: "No student is an athlete" is not forced; a student could be an athlete without being a player, so II does not follow.

Why other options are wrong:

- Options claiming II follows are wrong; "athlete" is wider than "player".

Final Answer: Only I follows $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q20

Q21.

Solution

Concept — Course of action: A course of action should be practical and should genuinely address the problem.

Step 1 — Course I: Supplying water through tankers gives immediate relief to affected areas, so it is a sensible action. I follows.

Step 2 — Course II: Advising people to use water carefully reduces wastage and eases the shortage, so it also follows.

Step 3 — Conclusion: Both a short-term supply step and a long-term conservation step are valid, so both follow.

Why other options are wrong:

- Any option dropping I or II is wrong, since each action helps tackle the shortage.

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

Answer: (D) Go Back to Q21

Q22.

Solution

Concept — Implicit assumptions: An assumption is something taken for granted that must hold for the statement to make sense.

Step 1 — Assumption I: The advertisement targets students who want to succeed in the entrance examination; if none wanted to, the appeal would be pointless. I is implicit.

Step 2 — Assumption II: Inviting students to "join coaching" assumes coaching can help them prepare better; otherwise the offer makes no sense. II is implicit.

Why other options are wrong:

- Dropping either assumption is wrong, since both underlie the advertisement.

Final Answer: Both I and II are implicit $\Rightarrow$ B

Answer: (B) Go Back to Q22

Q23.

Solution

Concept — Direction sense (cancel opposite legs): East and West distances cancel; the leftover gives the net position.

Step 1 — Leg 1: 6 m East.

Step 2 — Turn left, Leg 2: Facing East, a left turn points North; walk 4 m North.

Step 3 — Turn left, Leg 3: Facing North, a left turn points West; walk 6 m West. The 6 m West cancels the 6 m East.

Step 4 — Net position: Only the 4 m North remains, so he is 4 m North of the start.

Why other options are wrong:

- 6 m North and 10 m North add wrong legs; 6 m East ignores the cancellation.

Final Answer: 4 m North $\Rightarrow$ C

Answer: (C) Go Back to Q23

Q24.

Solution

Concept — Direction sense (cancel opposite legs): North and South distances cancel; the leftover gives the net position.

Step 1 — List the legs: 7 m North, then 2 m East (right turn while facing North), then 7 m South (right turn while facing East).

Step 2 — Vertical movement: 7 m North and 7 m South cancel out.

Step 3 — Horizontal movement: Only 2 m East remains, so he is 2 m East of the start.

Why other options are wrong:

- 7 m East and 9 m East add vertical legs that cancel; 2 m West reverses the direction.

Final Answer: 2 m East $\Rightarrow$ B

Answer: (B) Go Back to Q24

Q25.

Solution

Concept — Counting squares: Count squares of every possible size in the 3×2 grid of unit cells.

Step 1 — Unit squares: The grid has 3 columns and 2 rows, giving $3 \times 2 = 6$ unit squares.

Step 2 — 2×2 squares: A 2×2 square needs a 2×2 block of cells. With only 2 rows, it can sit in 2 horizontal positions, giving 2 such squares.

Step 3 — Total: $6 + 2 = 8$ squares.

Why other options are wrong:

- 6 counts only the unit squares; 9 and 10 over-count (a 3×3 square cannot fit in 2 rows).

Final Answer: 8 squares $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q25

Q26.

Solution

Concept — Figure series (rotation): Identify the fixed angle of rotation between successive figures.

Step 1 — Read the figures: The arrow points East, then South, then West — a 90° clockwise turn each step.

Step 2 — Next figure: A further 90° clockwise turn from West points North.

Why other options are wrong:

- East, South and West repeat earlier figures instead of continuing the rotation.

Final Answer: The arrow points North $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q26

Q27.

Solution

Concept — Counting triangles: Two cevians from the apex split the base into three parts; count triangles by how many adjacent base parts they span.

Step 1 — Smallest triangles (1 base part each): The two cevians cut the big triangle into 3 small triangles side by side.

Step 2 — Medium triangles (2 base parts each): Combining two adjacent small triangles gives 2 more triangles (left pair and right pair).

Step 3 — Largest triangle (all 3 base parts): The whole outer triangle is 1 more.

Step 4 — Total: $3 + 2 + 1 = 6$ triangles.

Why other options are wrong:

- 4 and 5 miss some combined triangles; 7 over-counts.

Final Answer: 6 triangles $\Rightarrow$ $\boxed{\text{C}}$

Answer: (C) Go Back to Q27

Q28.

Solution

Concept — Odd figure out: Compare the shapes and find the one with a different form.

Step 1 — Compare: Figures A, B and C are shaded triangles; figure D is a shaded circle.

Step 2 — Conclusion: The circle is the odd figure.

Why other options are wrong:

- A, B and C are all triangles of the same kind, so they belong together.

Final Answer: Figure D is different $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q28

Q29.

Solution

Concept — Linear seating: Fix the ends first, then place the remaining people using the clues.

Step 1 — Ends: K is at the extreme right (position 5) and M is at the extreme left (position 1).

Step 2 — Place L: L is immediately to the left of K, so L is at position 4.

Step 3 — Place J and N: J is immediately to the right of M, so J is at position 2. The only seat left, position 3, goes to N.

Step 4 — Read the order: The row is M, J, N, L, K; the middle seat (position 3) is N.

M	J	N	L	K

Why other options are wrong:

- J is at position 2, L at position 4 and M at the end — none is in the middle.

Final Answer: N sits in the middle $\Rightarrow$ B

Answer: (B) Go Back to Q29

Q30.

Solution

Concept — Rank from the other end: For a single line, rank from top + rank from bottom = total +1.

Step 1 — Known values: Total students = 28, rank from top = 9.

Step 2 — Apply the formula: Rank from bottom $= 28 - 9 + 1 = 20$.

Why other options are wrong:

- 19 forgets the "+1"; 21 and 18 misapply the formula.

Final Answer: Anil's rank from the bottom is 20th $\Rightarrow$ A

Answer: (A) Go Back to Q30

Answer Key

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