RIE CEE Reasoning Ability

Sample Paper – 1

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: $6,\ 11,\ 21,\ 36,\ 56,\ ?$

(A) 76

(B) 79

(C) 81

(D) 86

Q2. Find the next term in the series: $3,\ 7,\ 15,\ 31,\ 63,\ ?$

(A) 127

(B) 125

(C) 124

(D) 130

Q3. Find the next term in the letter series: $C,\ F,\ J,\ O,\ ?$

(A) T

(B) S

(C) V

(D) U

Q4. Find the next term in the series: $2,\ 6,\ 12,\ 20,\ 30,\ ?$

(A) 40

(B) 42

(C) 44

(D) 36

Q5. Find the next term in the series: $A3,\ D6,\ G9,\ J12,\ ?$

(A) M15

(B) L15

(C) M12

(D) N15

Q6. $7 : 56 :: 9 :?$

(A) 81

(B) 72

(C) 90

(D) 99

Q7. If $CAT : DBU$, then $DOG :?$

(A) EPF

(B) EPH

(C) FPH

(D) EOH

Q8. Pen is to Write as Knife is to:

(A) Sharp

(B) Kitchen

(C) Metal

(D) Cut

Q9. Choose the number that does not belong with the others: $8,\ 27,\ 64,\ 100,\ 125$

(A) 27

(B) 64

(C) 125

(D) 100

Q10. Choose the odd letter pair:

(A) DF

(B) HJ

(C) MQ

(D) PR

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

(A) Rose

(B) Lotus

(C) Mango

(D) Lily

Q12. In a certain code, CAT is written as ECV. How is DOG written in that code?

(A) FQI

(B) FQH

(C) EQI

(D) FPI

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

(A) 2-15-15-11

(B) 2-14-14-11

(C) 2-15-15-12

(D) 3-15-15-11

Q14. In a code language $FRIEND$ is written as $IULHQG$. How is $MOTHER$ written in the same code?

(A) PRWLHU

(B) PRWKHU

(C) PRWKGU

(D) QRWKHU

Q15. Pointing to a photograph, a man said, "She is the daughter of my grandfather's only son." How is the girl in the photograph related to the man?

(A) Daughter

(B) Sister

(C) Mother

(D) Aunt

Q16. A is B's sister. C is B's mother. D is C's father. How is A related to D?

(A) Grandmother

(B) Daughter

(C) Grandfather

(D) Granddaughter

Q17. Rahul said, "This girl is the wife of the grandson of my mother." How is Rahul related to the girl?

(A) Grandfather

(B) Husband

(C) Father-in-law

(D) Uncle

Q18. Statements: All pens are books. All books are tables.
Conclusions: I. All pens are tables. II. Some tables are pens.

(A) Both I and II follow

(B) Only I follows

(C) Only II follows

(D) Neither I nor II follows

Q19. Statements: Some cats are dogs. All dogs are animals.
Conclusions: I. Some cats are animals. II. All animals are dogs.

(A) Both I and II follow

(B) Only I follows

(C) Only II follows

(D) Neither I nor II follows

Q20. Statements: No flower is a stone. All stones are hard.
Conclusions: I. No flower is hard. II. Some hard things are stones.

(A) Both I and II follow

(B) Only I follows

(C) Neither I nor II follows

(D) Only II follows

Q21. Statement: Many students failed in Mathematics in the annual examination of a school.
Courses of action: I. The school should arrange extra Mathematics classes.
II. All the failed students should be promoted without re-examination.

(A) Only I follows

(B) Only II follows

(C) Both I and II follow

(D) Neither I nor II follows

Q22. Statement: "Visit our restaurant for the best vegetarian food in town." — an advertisement.
Assumptions: I. Some people prefer vegetarian food. II. The restaurant wants to attract more customers.

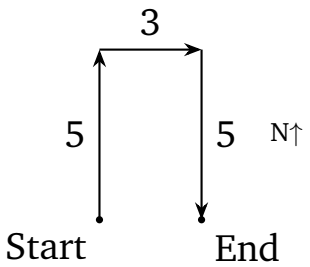
(A) Only I is implicit

(B) Only II is implicit

(C) Both I and II are implicit

(D) Neither I nor II is implicit

Q23. A man starts from a point, walks 5 km North, turns right and walks 3 km, then turns right again and walks 5 km. How far and in which direction is he now from the starting point?



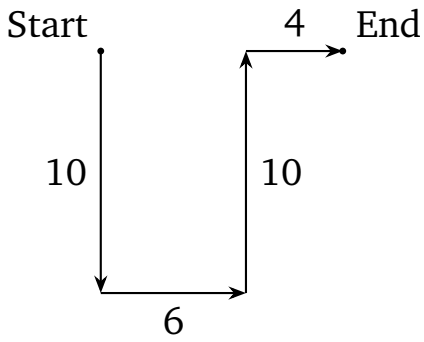
(A) 5 km East

(B) 3 km East

(C) 3 km West

(D) 8 km East

Q24. A girl walks 10 m South, turns left and walks 6 m, turns left and walks 10 m, then turns right and walks 4 m. How far is she from the starting point?



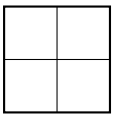
(A) 6 m East

(B) 4 m East

(C) 16 m East

(D) 10 m East

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



(A) 4

(B) 9

(C) 5

(D) 6

Q26. The arrow rotates in a fixed pattern. Which direction should the arrow point in the next figure?

↑ → ↓ ?

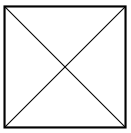
(A) ← (points West)

(B) ↑ (points North)

(C) → (points East)

(D) ↓ (points South)

Q27. How many triangles are there in the figure given below?



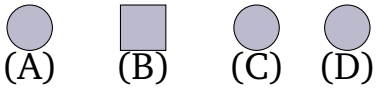
(A) 4

(B) 6

(C) 10

(D) 8

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 friends A, B, C, D and E are sitting in a row facing North. B is at the extreme left end and C is at the extreme right end. C is to the immediate right of D. E is to the immediate right of B. Who is sitting exactly in the middle of the row?

(A) A

(B) E

(C) D

(D) B

Q30. In a class of 30 students, Ravi's rank is 12th from the top. What is his rank from the bottom?

(A) 18th

(B) 17th

(C) 19th

(D) 20th

Detailed Solutions

Q1.

Solution

Concept — Number series (growing differences): When consecutive differences themselves form a simple pattern, extend that pattern of differences first.

Step 1 — Write the differences: $11-6=5$, $21-11=10$, $36-21=15$, $56-36=20$.

Step 2 — Spot the pattern: The differences are $5, 10, 15, 20$, increasing by 5 each time.

Step 3 — Find the next difference: The next difference is $20+5=25$.

Step 4 — Add to the last term: $56+25=81$.

Why other options are wrong:

- 76 uses a difference of 20 again (forgets the $+5$ growth).
- 79 and 86 do not match any consistent difference pattern.

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

Answer: (C) Go Back to Q1

Q2.

Solution

Concept — Number series (multiply and add): Test a rule of the form "previous term $\times a + b$" when terms roughly double.

Step 1 — Test the rule: $3\times2+1=7$; $7\times2+1=15$; $15\times2+1=31$; $31\times2+1=63$.

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

Step 3 — Apply to the last term: $63\times2+1=126+1=127$.

Why other options are wrong:

- 125 and 124 come from $\times 2-1$ or $\times 2-2$, which break the established rule.
- 130 does not follow any clean rule here.

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

Answer: (A) Go Back to Q2

Q3.

Solution

Concept — Letter series (growing gaps): Convert letters to their alphabet positions and study the gaps.

Step 1 — Positions: $C = 3$, $F = 6$, $J = 10$, $O = 15$.

Step 2 — Gaps: $6 - 3 = 3$, $10 - 6 = 4$, $15 - 10 = 5$. The gaps increase by 1.

Step 3 — Next gap and letter: Next gap $= 6$, so position $= 15 + 6 = 21 = U$.

Why other options are wrong:

- T (20) uses a gap of 5 again; S (19) and V (22) miss the position 21.

Final Answer: The next letter is $U \Rightarrow$ D

Answer: (D) Go Back to Q3

Q4.

Solution

Concept — Product pattern: Many series are of the form $n(n+1)$ for $n = 1, 2, 3, \ldots$

Step 1 — Match the form: $1 \times 2 = 2$, $2 \times 3 = 6$, $3 \times 4 = 12$, $4 \times 5 = 20$, $5 \times 6 = 30$.

Step 2 — Next term: For $n = 6$: $6 \times 7 = 42$.

Why other options are wrong:

- 40 and 44 are near 42 but break the $n(n+1)$ rule; 36 is 6×6, the wrong product.

Final Answer: The next term is $42 \Rightarrow$ B

Answer: (B) 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, D, G, J increase by 3 each time, so next is M.

Step 2 — Numbers: $3, 6, 9, 12$ increase by 3 each time, so next is 15.

Step 3 — Combine: The next term is $M15$.

Why other options are wrong:

- L15 uses the wrong letter; M12 uses the wrong number; N15 skips a letter.

Final Answer: The next term is $M15 \Rightarrow$ A

Answer: (A) Go Back to Q5

Q6.

Solution

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

Step 1 — Rule: $7 \times 8 = 56$, that is $n \times (n + 1)$.

Step 2 — Apply: For 9: $9 \times 10 = 90$.

Why other options are wrong:

- 81 is 9×9; 72 is 9×8; 99 is 9×11 — none use $n(n + 1)$.

Final Answer: $9 : 90 \Rightarrow$ 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: $C \to D$ $(+1)$, $A \to B$ $(+1)$, $T \to U$ $(+1)$. The rule is $+1$ to each letter.

Step 2 — Apply to DOG: $D \to E$, $O \to P$, $G \to H$, giving EPH.

Why other options are wrong:

- EPF and EOH shift one letter wrongly; FPH shifts D by 2.

Final Answer: $DOG \to EPH \Rightarrow$ B

Answer: (B) Go Back to Q7

Q8.

Solution

Concept — Word analogy (tool : function): A pen's main function is to write; match the tool to its main function.

Step 1 — First pair: Pen $\to$ Write (you use a pen to write).

Step 2 — Apply: A knife is used to cut, so Knife $\to$ Cut.

Why other options are wrong:

- Sharp and Metal describe the knife, not its function; Kitchen is only a location.

Final Answer: Knife is to Cut $\Rightarrow$ 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 for cubes: $8 = 2^3$, $27 = 3^3$, $64 = 4^3$, $125 = 5^3$.

Step 2 — Check 100: $100 = 10^2$ is a perfect square but not a perfect cube.

Step 3 — Conclusion: 100 is the odd one out.

Why other options are wrong:

- 27, 64 and 125 are all perfect cubes, so they belong together.

Final Answer: 100 does not belong $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q9

Q10.

Solution

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

Step 1 — Gaps: DF: $D(4) \to F(6)$, gap 2. HJ: gap 2. PR: gap 2. MQ: $M(13) \to Q(17)$, gap 4.

Step 2 — Conclusion: Three pairs have a gap of 2; MQ has a gap of 4, so it is the odd one.

Why other options are wrong:

- DF, HJ and PR all have a gap of 2 between the letters.

Final Answer: MQ is the odd pair $\Rightarrow$ $\boxed{\text{C}}$

Answer: (C) Go Back to Q10

Q11.

Solution

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

Step 1 — Identify the items: Rose, Lotus and Lily are all flowers.

Step 2 — The outsider: Mango is a fruit, not a flower.

Why other options are wrong:

- Rose, Lotus and Lily share the category "flower".

Final Answer: Mango does not belong $\Rightarrow$ C

Answer: (C) Go Back to Q11

Q12.

Solution

Concept — Coding by letter shift: Find the constant shift from the plain word to its code.

Step 1 — Find the shift: $C \to E$ $(+2)$, $A \to C$ $(+2)$, $T \to V$ $(+2)$. The shift is $+2$.

Step 2 — Apply to DOG: $D \to F$, $O \to Q$, $G \to I$, giving FQI.

Why other options are wrong:

- FQH, EQI and FPI each shift one letter incorrectly.

Final Answer: $DOG \to FQI \Rightarrow$ A

Answer: (A) 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: $B = 2$, $O = 15$, $O = 15$, $K = 11$.

Step 2 — Write the code: $BOOK$ = 2-15-15-11.

Why other options are wrong:

- 2-14-14-11 puts $O = 14$; 2-15-15-12 puts $K = 12$; 3-15-15-11 puts $B = 3$.

Final Answer: $BOOK$ = 2-15-15-11 $\Rightarrow$ A

Answer: (A) Go Back to Q13

Q14.

Solution

Concept — Coding by fixed shift: Determine the shift from $FRIEND$ to $IULHQG$ and reuse it.

Step 1 — Find the shift: $F \to I$ $(+3)$, $R \to U$ $(+3)$, $I \to L$ $(+3)$. The shift is $+3$.

Step 2 — Apply to MOTHER: $M \to P$, $O \to R$, $T \to W$, $H \to K$, $E \to H$, $R \to U$, giving $PRWKHU$.

Why other options are wrong:

- PRWLHU, PRWKGU and QRWKHU each have one letter shifted wrongly.

Final Answer: $MOTHER \to PRWKHU \Rightarrow$ 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 grandfather's only son": The grandfather's only son is the man's own father.

Step 2 — "the daughter of (my father)": The daughter of the man's father is the man's sister.

Why other options are wrong:

- Daughter, Mother and Aunt do not match "father's daughter".

Final Answer: The girl is the man's sister $\Rightarrow$ B

Answer: (B) 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: A is B's sister, so A and B are children of the same parents. C is B's mother, so C is also A's mother. D is C's father.

Step 2 — Relate A to D: D is the father of A's mother, i.e. A's maternal grandfather. Since A is female, A is D's granddaughter.

Why other options are wrong:

- Grandmother and Grandfather reverse the generation; Daughter skips a generation.

Final Answer: A is D's granddaughter $\Rightarrow$ D

Answer: (D) Go Back to Q16

Q17.

Solution

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

Step 1 — "grandson of my mother": The mother's grandson is Rahul's own son.

Step 2 — "wife of (Rahul's son)": The girl is the wife of Rahul's son, i.e. Rahul's daughter-in-law.

Step 3 — How Rahul relates to her: Rahul is the father of her husband, so Rahul is her father-in-law.

Why other options are wrong:

- Husband and Uncle are wrong relations; Grandfather is one generation too far.

Final Answer: Rahul is the girl's father-in-law $\Rightarrow$ C

Answer: (C) 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 pens are books and all books are tables, so all pens are tables. I follows.

Step 2 — Conclusion II: If all pens are tables, then at least those pens are tables, so some tables are pens. 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 $\Rightarrow$ A

Answer: (A) 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 cats are dogs, and all dogs are animals, so those cats are animals. "Some cats are animals" follows.

Step 2 — Conclusion II: "All animals are dogs" reverses the given "all dogs are animals" and is not valid.

Why other options are wrong:

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

Final Answer: Only I follows $\Rightarrow$ B

Answer: (B) Go Back to Q19

Q20.

Solution

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

Step 1 — Conclusion I: "No flower is hard" is not forced: a flower could be hard without being a stone, so I does not follow.

Step 2 — Conclusion II: All stones are hard, so the stones are hard things; hence "some hard things are stones" follows.

Why other options are wrong:

- Options claiming I follows are wrong; "hard" is wider than "stone".

Final Answer: Only II follows $\Rightarrow$ D

Answer: (D) 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: Arranging extra Mathematics classes directly tackles the poor results, so it is a sensible action. I follows.

Step 2 — Course II: Promoting failed students without re-examination ignores the problem and lowers standards, so it does not follow.

Why other options are wrong:

- Any option accepting II is wrong, as it does not solve the failure problem.

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

Answer: (A) Go Back to Q21

Q22.

Solution

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

Step 1 — Assumption I: Advertising vegetarian food assumes that at least some people prefer it; otherwise the ad is pointless. I is implicit.

Step 2 — Assumption II: An advertisement is placed to draw customers, so the restaurant wanting more customers is implicit. 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 $\Rightarrow$ $\boxed{\text{C}}$

Answer: (C) Go Back to Q22

Q23.

Solution

Concept — Direction sense (net displacement): Track each leg on a grid and combine the moves.

Step 1 — Leg 1: 5 km North.

Step 2 — Turn right, Leg 2: Facing North, a right turn points East; walk 3 km East.

Step 3 — Turn right, Leg 3: Facing East, a right turn points South; walk 5 km South. The 5 km South cancels the 5 km North.

Step 4 — Net position: Only the 3 km East remains, so he is 3 km East of the start.

Why other options are wrong:

- 5 km East and 8 km East add wrong legs; 3 km West reverses the direction.

Final Answer: 3 km East $\Rightarrow$ B

Answer: (B) Go Back to Q23

Q24.

Solution

Concept — Direction sense (cancel opposite legs): North and South distances cancel; East and West distances cancel.

Step 1 — List the legs: 10 m South, then 6 m East (left turn while facing South), then 10 m North (left turn while facing East), then 4 m East (right turn while facing North).

Step 2 — Vertical movement: 10 m South and 10 m North cancel out.

Step 3 — Horizontal movement: 6 m East + 4 m East = 10 m East.

Why other options are wrong:

- 6 m and 4 m use only one horizontal leg; 16 m wrongly adds a vertical leg.

Final Answer: 10 m East $\Rightarrow$ D

Answer: (D) Go Back to Q24

Q25.

Solution

Concept — Counting squares: Count squares of every possible size, not just the smallest.

Step 1 — Small squares: The grid is 2×2, giving 4 unit squares.

Step 2 — Large square: The whole outer boundary is one 2×2 square.

Step 3 — Total: $4 + 1 = 5$ squares.

Why other options are wrong:

- 4 counts only the small squares; 9 and 6 over-count.

Final Answer: 5 squares $\Rightarrow$ $\boxed{\text{C}}$

Answer: (C) 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 North, then East, then South — a 90° clockwise turn each step.

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

Why other options are wrong:

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

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

Answer: (A) Go Back to Q26

Q27.

Solution

Concept — Counting triangles: A square with both diagonals creates triangles of two sizes.

Step 1 — Small triangles: The two diagonals cross at the centre and cut the square into 4 small triangles.

Step 2 — Larger triangles: Each side of the square together with the two half-diagonals forms a larger triangle; there are 4 such triangles (top, bottom, left, right halves).

Step 3 — Total: $4 + 4 = 8$ triangles.

Why other options are wrong:

- 4 counts only the small ones; 6 and 10 miscount the larger triangles.

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

Answer: (D) 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, C and D are shaded circles; figure B is a shaded square.

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

Why other options are wrong:

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

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

Answer: (B) Go Back to Q28

Q29.

Solution

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

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

Step 2 — Place D: C is to the immediate right of D, so D is at position 4.

Step 3 — Place E and A: E is immediately right of B, so E is at position 2. The only seat left, position 3, goes to A.

Step 4 — Read the order: The row is B, E, A, D, C; the middle seat (position 3) is A.

B	E	A	D	C

Why other options are wrong:

- E is at position 2, D at position 4 and B at the end — none is in the middle.

Final Answer: A sits in the middle $\Rightarrow$ A

Answer: (A) 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 = 30, rank from top = 12.

Step 2 — Apply the formula: Rank from bottom $= 30 - 12 + 1 = 19$.

Why other options are wrong:

- 18 forgets the "+1"; 17 and 20 misapply the formula.

Final Answer: Ravi's rank from the bottom is 19th $\Rightarrow$ C

Answer: (C) Go Back to Q30

Answer Key

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