

Class 7 · Reasoning Olympiad

Total questions 50	Total marks 60	Time 60 minutes	Negative marking None
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Each question has four options, of which only one is correct. Mark your answer on the answer sheet. The Achievers Section carries higher marks per question. The answer key with full solutions is at the end of this paper.

This is original practice material written to the Level 1 pattern. It is not a past paper and is not affiliated with SOF or any official olympiad body.

Logical Reasoning

45 questions · 1 mark each · 45 marks

Q1. A father is 4 years older than his son. The son is 11 years old now. How old will the father be after 6 years?

- (A) 22 years (B) 21 years (C) 27 years (D) 15 years

Q2. Hunger : Food :: Thirst : ____

- (A) Shade (B) Sleep (C) Water (D) Air

Q3. Three of the following four are alike and form a group. Which one does NOT belong?

- (A) Crow (B) Pigeon (C) Tiger (D) Sparrow

Q4. Which one does NOT belong with the others?

- (A) Pentagon (B) Circle (C) Square (D) Triangle

Q5. If TIN is written as 20 - 9 - 14 using the positions of the letters in the alphabet, how is CAT written?

- (A) 24 - 26 - 7 (B) 20 - 1 - 3 (C) 3 - 1 - 20 (D) 4 - 2 - 21

Q6. Which letter comes next? C, E, H, L, ____

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

Q7. Read the statements and choose the conclusion that MUST be true.

All metals conduct electricity. Copper is a metal.

- (A) Only copper is a metal. (B) Copper conducts electricity.
(C) Copper does not conduct electricity. (D) All conductors are copper.

Q8. In a row of 35 children, Arjun is 10th from the left end. What is Arjun's position from the right end?

- (A) 25th (B) 27th (C) 26th (D) 28th

Q9. Five friends A, B, C, D and E sit in a row of five seats. A sits at the extreme left end, D sits at the extreme right end, C sits exactly in the middle and B sits between A and C. Who sits in the fourth seat from the left?

- (A) D (B) C (C) B (D) E

Q10. Find the next number in the pattern: 4, 9, 19, 39, ____

- (A) 79 (B) 77 (C) 80 (D) 78

Q11. In a class, 21 students play cricket, 13 play football and 6 play both games. Every student plays at least one of the two. How many students are there in the class?

- (A) 22 (B) 29 (C) 34 (D) 28

Q12. Find the odd one out: 12, 15, 21, 30, 35

- (A) 15 (B) 30 (C) 12 (D) 35

Q13. In a queue, Deep is 4th from the front and 12th from the back. How many people are in the queue altogether?

- (A) 15 (B) 14 (C) 17 (D) 16

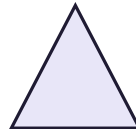
Q14. Which of these figures has exactly 3 lines of symmetry?



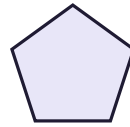
(A)



(B)



(C)



(D)

Q15. Find the next number in the pattern: 17, 19, 21, 23, ____

- (A) 27 (B) 23 (C) 26 (D) 25

Q16. Count backward in 3s: 30, 27, 24, 21, ____

- (A) 18 (B) 19 (C) 15 (D) 21

Q17. $10 : 100 :: 11 : \underline{\hspace{1cm}}$

- (A) 100 (B) 22 (C) 144 (D) 121

Q18. If the 12th of a month is a Thursday, what day of the week is the 23th of the same month?

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

Q19. In a certain code JAR is written as NEV. How is MAP written in that code?

- (A) QET (B) IWL (C) RFU (D) TEQ

Q20. In the first row the numbers are 5, 6 and 31. In the second row they are 6, 9 and 45. In the third row they are 9, 7 and ____ . The same rule applies to every row.

- (A) 88 (B) 89 (C) 87 (D) 90

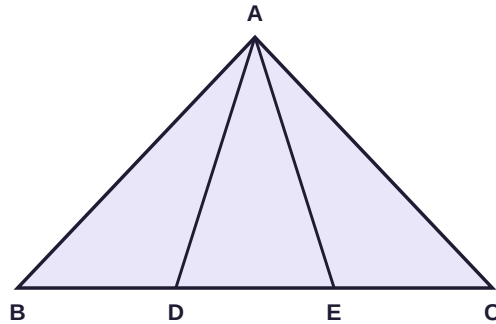
Q21. Pointing to a boy in a photograph, Vikram said, "He is the son of my paternal grandfather's only son." How is the boy related to Vikram?

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

Q22. Kabir walks 5 m towards north, turns right and walks 2 m, then turns right again and walks 5 m. How far is Kabir from the starting point, and in which direction?

- (A) 2 m, West (B) 5 m, East (C) 2 m, East (D) 7 m, North

Q23. How many triangles are there in the given figure?



- (A) 8 (B) 6 (C) 7 (D) 5

Q24. Which word would come FIRST in a dictionary?

- (A) matter (B) monkey (C) mango (D) melon

Q25. Which letter comes next? A, D, G, J, ____

- (A) M (B) L (C) N (D) P

Q26. A father is 23 years older than his son. The son is 20 years old now. How old will the father be after 5 years?

- (A) 43 years (B) 53 years (C) 49 years (D) 48 years

Q27. Doctor : Hospital :: Teacher : ____

- (A) Farm (B) School (C) Court (D) Factory

Q28. If DOG is written as 4 - 15 - 7 using the positions of the letters in the alphabet, how is CAT written?

- (A) 3 - 1 - 20 (B) 24 - 26 - 7 (C) 20 - 1 - 3 (D) 4 - 2 - 21

Q29. Which letter comes next? F, H, K, O, ____

- (A) S (B) T (C) R (D) U

Q30. Read the statements and choose the conclusion that MUST be true.

All squares are rectangles. All rectangles have four sides.

- (A) No rectangle is a square. (B) All rectangles are squares.
(C) All squares have four sides. (D) Some squares have three sides.

Q31. In a row of 32 children, Ravi is 8th from the left end. What is Ravi's position from the right end?

- (A) 24th (B) 26th (C) 25th (D) 27th

Q32. Find the next number in the pattern: 5, 11, 23, 47, ____

- (A) 94 (B) 93 (C) 95 (D) 96

Q33. In a class, 15 students play cricket, 10 play football and 5 play both games. Every student plays at least one of the two. How many students are there in the class?

- (A) 20 (B) 21 (C) 25 (D) 15

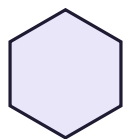
Q34. Find the odd one out: 12, 20, 24, 30, 44

- (A) 24 (B) 44 (C) 20 (D) 30

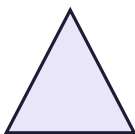
Q35. In a queue, Deep is 10th from the front and 6th from the back. How many people are in the queue altogether?

- (A) 16 (B) 14 (C) 15 (D) 17

Q36. Which of these figures has exactly 6 lines of symmetry?



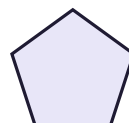
(A)



(B)



(C)



(D)

Q37. Find the next number in the pattern: 26, 29, 32, 35, ____

- (A) 35 (B) 38 (C) 41 (D) 39

Q38. Count backward in 10s: 90, 80, 70, 60, ____

- (A) 40 (B) 60 (C) 50 (D) 51

Q39. $6 : 36 :: 11 : \underline{\hspace{1cm}}$

- (A) 121 (B) 22 (C) 144 (D) 100

Q40. If the 10th of a month is a Thursday, what day of the week is the 23th of the same month?

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

Q41. Sima walks 8 m north, then 5 m east, then 4 m south. Where is Sima now, relative to the starting point?

- (A) 5 m north and 5 m east (B) 4 m north and 5 m east
(C) 8 m north and 5 m east (D) 4 m north and 6 m east

Q42. In a certain code JAR is written as KBS. How is DOG written in that code?

- (A) HPE (B) FQI (C) CNF (D) EPH

Q43. In the first row the numbers are 4, 3 and 11. In the second row they are 8, 6 and 47. In the third row they are 2, 4 and ____ . The same rule applies to every row.

- (A) 8 (B) 6 (C) 9 (D) 7

Q44. Pointing to a boy in a photograph, Meera said, "He is the son of my paternal grandfather's only son." How is the boy related to Meera?

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

Q45. Meera walks 8 m towards north, turns right and walks 5 m, then turns right again and walks 8 m. How far is Meera from the starting point, and in which direction?

- (A) 13 m, North (B) 5 m, West (C) 5 m, East (D) 8 m, East

Achievers Section

5 questions · 3 marks each · 15 marks

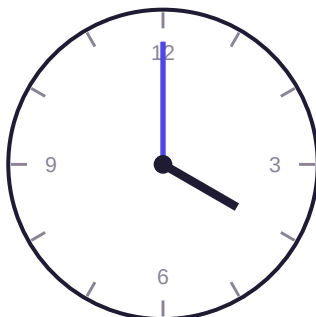
Q46. The binary number 1000 equals which decimal number?

- (A) 8 (B) 4 (C) 16 (D) 1000

Q47. A river rises in the Himalayas, flows east across northern India and forms the world's largest delta before reaching the Bay of Bengal. Which river is it?

- (A) The Narmada (B) The Ganga (C) The Krishna (D) The Godavari

Q48. The clock in the figure shows 4:00. What is the angle between the hour hand and the minute hand?



- (A) 135° (B) 120° (C) 150° (D) 105°

Q49. Find the next number: 6, 8, 12, 18, 26, ____

- (A) 36 (B) 38 (C) 37 (D) 34

Q50. How many numbers between 40 and 70 leave a remainder of 2 when divided by 9?

- (A) 2 (B) 4 (C) 5 (D) 3

Answer Key

1	2	3	4	5	6	7	8	9	10
B	C	C	B	C	C	B	C	D	A
11	12	13	14	15	16	17	18	19	20
D	D	A	C	D	A	D	A	A	A
21	22	23	24	25	26	27	28	29	30
D	C	B	C	A	D	B	A	B	C
31	32	33	34	35	36	37	38	39	40
C	C	A	D	C	A	B	C	A	C
41	42	43	44	45	46	47	48	49	50
B	D	D	D	C	A	B	B	A	D

Solutions

Q1. (B) The father is $11 + 4 = 15$ now, so after 6 years he will be $15 + 6 = 21$ years.

Q2. (C) The second word relates to the first in the same way Water relates to Thirst.

Q3. (C) Crow, Sparrow, Pigeon are all birds; Tiger is not.

Q4. (B) Circle has no straight sides.

Q5. (C) C is letter 3 and A is letter 1 and T is letter 20, so CAT = $3 - 1 - 20$.

Q6. (C) The gaps grow by one each time (+2, +3, +4, +5), so after L the next letter is Q.

- Q7. (B) From "All metals conduct electricity. Copper is a metal." it follows necessarily that copper conducts electricity.
- Q8. (C) Position from the right = total - position from the left + 1 = $35 - 10 + 1 = 26$ th.
- Q9. (D) Seat 1 = A, seat 3 = C, seat 5 = D. B must be between A and C, so B takes seat 2, and the only friend left for seat 4 is E.
- Q10. (A) Each number is doubled and 1 is added: $39 \times 2 + 1 = 79$.
- Q11. (D) $21 + 13 - 6 = 28$. The 6 who play both were counted twice, so they are subtracted once.
- Q12. (D) Every other number is a multiple of 3. 35 is not.
- Q13. (A) Counting Deep only once: $4 + 12 - 1 = 15$ people.
- Q14. (C) Counting lines of symmetry: rectangle has 2, square has 4, equilateral triangle has 3, regular pentagon has 5. The answer is figure (C).
- Q15. (D) Each number is 2 more than the one before it, so the next is $23 + 2 = 25$.
- Q16. (A) Subtracting 3 from 21 gives 18.
- Q17. (D) The second number is the first multiplied by itself: $10 \times 10 = 100$, so $11 \times 11 = 121$.
- Q18. (A) 11 days later is 1 week(s) and 4 day(s), so the day moves 4 place(s) on from Thursday to Monday.
- Q19. (A) Each letter moves 4 place(s) forward in the alphabet, so MAP becomes QET.
- Q20. (A) The rule is: square the first number and add the second. Check: 5, 6 gives 31 and 6, 9 gives 45; so 9, 7 gives 88.
- Q21. (D) Vikram's paternal grandfather's only son is Vikram's own father, so that man's son is Vikram's own sibling. The answer is Brother.
- Q22. (C) The two 5 m walks (north, then south) cancel out, leaving only the 2 m walked towards the east. So the answer is 2 m, East.
- Q23. (B) Every triangle has apex A and two of the 4 base points as its other corners. Choosing 2 from 4 gives 6 triangles.
- Q24. (C) In alphabetical order the words run mango, matter, melon, monkey, so mango comes first.
- Q25. (A) Each letter moves 3 place(s) forward in the alphabet, so after J comes M.
- Q26. (D) The father is $20 + 23 = 43$ now, so after 5 years he will be $43 + 5 = 48$ years.
- Q27. (B) The second word relates to the first in the same way School relates to Teacher.
- Q28. (A) C is letter 3 and A is letter 1 and T is letter 20, so $CAT = 3 - 1 - 20$.
- Q29. (B) The gaps grow by one each time (+2, +3, +4, +5), so after O the next letter is T.
- Q30. (C) From "All squares are rectangles. All rectangles have four sides." it follows necessarily that all squares have four sides.
- Q31. (C) Position from the right = total - position from the left + 1 = $32 - 8 + 1 = 25$ th.
- Q32. (C) Each number is doubled and 1 is added: $47 \times 2 + 1 = 95$.
- Q33. (A) $15 + 10 - 5 = 20$. The 5 who play both were counted twice, so they are subtracted once.
- Q34. (D) Every other number is a multiple of 4. 30 is not.
- Q35. (C) Counting Deep only once: $10 + 6 - 1 = 15$ people.
- Q36. (A) Counting lines of symmetry: regular hexagon has 6, equilateral triangle has 3, rectangle has 2, regular pentagon has 5. The answer is figure (A).
- Q37. (B) Each number is 3 more than the one before it, so the next is $35 + 3 = 38$.
- Q38. (C) Subtracting 10 from 60 gives 50.
- Q39. (A) The second number is the first multiplied by itself: $6 \times 6 = 36$, so $11 \times 11 = 121$.
- Q40. (C) 13 days later is 1 week(s) and 6 day(s), so the day moves 6 place(s) on from Thursday to Wednesday.
- Q41. (B) The 4 m south cancels part of the 8 m north, leaving $8 - 4 = 4$ m north, and the 5 m east is unchanged. So Sima is 4 m north and 5 m east.

- Q42. (D) Each letter moves 1 place(s) forward in the alphabet, so DOG becomes EPH.
- Q43. (D) The rule is: multiply the two numbers, then subtract 1. Check: 4, 3 gives 11 and 8, 6 gives 47; so 2, 4 gives 7.
- Q44. (D) Meera's paternal grandfather's only son is Meera's own father, so that man's son is Meera's own sibling. The answer is Brother.
- Q45. (C) The two 8 m walks (north, then south) cancel out, leaving only the 5 m walked towards the east. So the answer is 5 m, East.
- Q46. (A) 1000 in binary is $1 \times 8 + 0 \times 4 + 0 \times 2 + 0 \times 1 = 8$.
- Q47. (B) The Ganga flows east and forms the Sundarbans delta at the Bay of Bengal.
- Q48. (B) The minute hand is at 0° from 12 and the hour hand at 120° from 12, so the angle between them is 120° .
- Q49. (A) The gaps grow 2, 4, 6, 8, so the next gap is 10 and $26 + 10 = 36$.
- Q50. (D) The numbers are 47, 56, 65 — 3 of them.

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