

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. Find the next number in the pattern: 12, 18, 24, 30, ____

- (A) 36 (B) 37 (C) 30 (D) 42

Q2. In a row of 24 children, Ravi is 12th from the left end. What is Ravi's position from the right end?

- (A) 15th (B) 14th (C) 13th (D) 12th

Q3. In a certain code FAN is written as JER. How is PEN written in that code?

- (A) TIR (B) UJS (C) RIT (D) LAJ

Q4. Three of the following four are alike and form a group. Which one does NOT belong?

- (A) Copper (B) Silver (C) Iron (D) Wood

Q5. In a queue, Nita is 7th from the front and 7th from the back. How many people are in the queue altogether?

- (A) 15 (B) 13 (C) 14 (D) 12

Q6. If the 18th of a month is a Sunday, what day of the week is the 29th of the same month?

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

Q7. Find the next number in the pattern: 2, 5, 11, 23, ____

- (A) 45 (B) 46 (C) 47 (D) 48

Q8. Which letter comes next? C, G, K, O, ____

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

Q9. In a class, 20 students play cricket, 14 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) 29 (B) 24 (C) 30 (D) 34

Q10. Hunger : Food :: Thirst : ____

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

Q11. If TIN is written as 20 - 9 - 14 using the positions of the letters in the alphabet, how is MAP written?

- (A) 14 - 26 - 11 (B) 13 - 1 - 16 (C) 14 - 2 - 17 (D) 16 - 1 - 13

Q12. 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) Uncle (B) Nephew (C) Cousin (D) Brother

Q13. Which word would come FIRST in a dictionary?

- (A) marble (B) melon (C) museum (D) mango

Q14. In the first row the numbers are 8, 4 and 68. In the second row they are 8, 6 and 70. In the third row they are 4, 6 and ____ . The same rule applies to every row.

- (A) 21 (B) 23 (C) 24 (D) 22

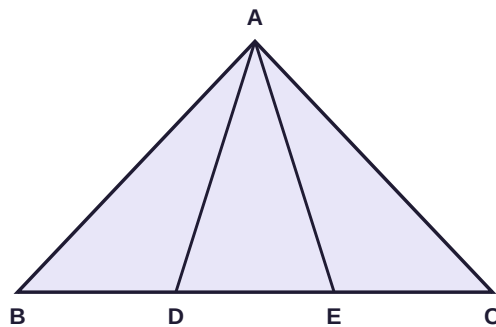
Q15. $10 : 100 :: 11 : \underline{\hspace{1cm}}$

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

Q16. Find the odd one out: 12, 18, 26, 36, 66

- (A) 18 (B) 26 (C) 12 (D) 36

Q17. How many triangles are there in the given figure?



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

Q18. Which one does NOT belong with the others?

- (A) Crow (B) Bat (C) Eagle (D) Sparrow

Q19. Read the statements and choose the conclusion that MUST be true.

All metals conduct electricity. Copper is a metal.

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

Q20. Which letter comes next? G, I, L, P, ____

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

Q21. Arjun walks 9 m towards north, turns right and walks 2 m, then turns right again and walks 9 m. How far is Arjun from the starting point, and in which direction?

- (A) 11 m, North (B) 9 m, East (C) 2 m, East (D) 2 m, West

Q22. A father is 18 years older than his son. The son is 16 years old now. How old will the father be after 4 years?

- (A) 42 years (B) 34 years (C) 38 years (D) 39 years

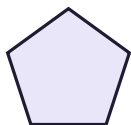
Q23. Count backward in 10s: 100, 90, 80, 70, ____

- (A) 60 (B) 61 (C) 50 (D) 70

Q24. 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) B (B) E (C) C (D) D

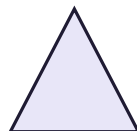
Q25. Which of these figures has exactly 6 lines of symmetry?



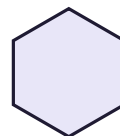
(A)



(B)



(C)



(D)

Q26. Find the next number in the pattern: 30, 38, 46, 54, ____

- (A) 70 (B) 63 (C) 54 (D) 62

Q27. In a row of 26 children, Arjun is 22th from the left end. What is Arjun's position from the right end?

- (A) 4th (B) 7th (C) 5th (D) 6th

Q28. In a certain code FAN is written as IDQ. How is CAT written in that code?

- (A) FDW (B) WDF (C) ZXQ (D) GEX

Q29. In a queue, Suresh is 6th from the front and 9th from the back. How many people are in the queue altogether?

- (A) 15 (B) 13 (C) 16 (D) 14

Q30. If the 12th of a month is a Saturday, what day of the week is the 29th of the same month?

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

Q31. Find the next number in the pattern: 3, 9, 21, 45, ____

- (A) 90 (B) 91 (C) 93 (D) 96

Q32. Which letter comes next? J, L, N, P, ____

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

Q33. In a class, 16 students play cricket, 16 play football and 10 play both games. Every student plays at least one of the two. How many students are there in the class?

- (A) 22 (B) 23 (C) 12 (D) 32

Q34. Bird : Nest :: Bee : ____

- (A) Burrow (B) Hive (C) Cave (D) Web

Q35. If DOG is written as 4 - 15 - 7 using the positions of the letters in the alphabet, how is BUS written?

- (A) 19 - 21 - 2 (B) 3 - 22 - 20 (C) 2 - 21 - 19 (D) 25 - 6 - 8

Q36. Pointing to a boy in a photograph, Anjali said, "He is the son of my paternal grandfather's only son." How is the boy related to Anjali?

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

Q37. In the first row the numbers are 9, 3 and 30. In the second row they are 4, 9 and 39. In the third row they are 7, 6 and ____ . The same rule applies to every row.

- (A) 46 (B) 44 (C) 45 (D) 47

Q38. $7 : 49 :: 11 : \underline{\hspace{1cm}}$

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

Q39. Nila walks 8 m north, then 5 m east, then 3 m south. Where is Nila now, relative to the starting point?

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

Q40. Find the odd one out: 21, 28, 35, 42, 55

- (A) 21 (B) 35 (C) 55 (D) 42

Q41. Read the statements and choose the conclusion that **MUST** be true.

All roses are flowers. All flowers need water.

- (A) Only roses need water. (B) All roses need water.
(C) All flowers are roses. (D) Some roses do not need water.

Q42. Riya walks 6 m towards north, turns right and walks 4 m, then turns right again and walks 6 m. How far is Riya from the starting point, and in which direction?

- (A) 4 m, East (B) 4 m, West (C) 10 m, North (D) 6 m, East

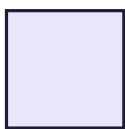
Q43. A father is 20 years older than his son. The son is 14 years old now. How old will the father be after 2 years?

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

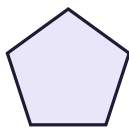
Q44. Count backward in 2s: 18, 16, 14, 12, ____

- (A) 12 (B) 10 (C) 11 (D) 8

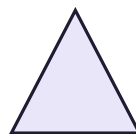
Q45. Which of these figures has exactly 4 lines of symmetry?



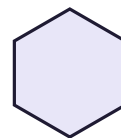
(A)



(B)



(C)

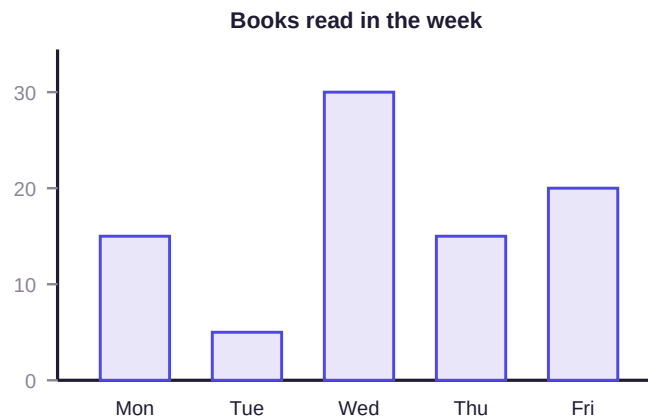


(D)

Achievers Section

5 questions · 3 marks each · 15 marks

Q46. The bar graph shows the number of books read by a class on each day of one week. How many books were read in the whole week?



- (A) 85 (B) 80 (C) 90 (D) 95

Q47. Using each of the digits 1, 9, 4, 0 exactly once, what is the smallest 4-digit number that can be formed?

- (A) 9410 (B) 0149 (C) 1058 (D) 1049

Q48. Two identical glasses hold water at 10°C and at 80°C . In which glass will a sugar cube dissolve faster?

- (A) Both at the same speed (B) The glass at 10°C
 (C) The glass at 80°C (D) Neither will dissolve

Q49. The average of 4 numbers is 35. 3 of them are 74, 16, 13. What is the remaining number?

- (A) 35 (B) 37 (C) 38 (D) 39

Q50. Find the next number: 3, 5, 9, 15, 23, ____

- (A) 33 (B) 34 (C) 31 (D) 35

Answer Key

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

Solutions

- Q1. (A) Each number is 6 more than the one before it, so the next is $30 + 6 = 36$.
- Q2. (C) Position from the right = total - position from the left + 1 = $24 - 12 + 1 = 13$ th.
- Q3. (A) Each letter moves 4 place(s) forward in the alphabet, so PEN becomes TIR.
- Q4. (D) Iron, Copper, Silver are all metals; Wood is not.
- Q5. (B) Counting Nita only once: $7 + 7 - 1 = 13$ people.
- Q6. (D) 11 days later is 1 week(s) and 4 day(s), so the day moves 4 place(s) on from Sunday to Thursday.
- Q7. (C) Each number is doubled and 1 is added: $23 \times 2 + 1 = 47$.
- Q8. (B) Each letter moves 4 place(s) forward in the alphabet, so after O comes S.
- Q9. (A) $20 + 14 - 5 = 29$. The 5 who play both were counted twice, so they are subtracted once.
- Q10. (D) The second word relates to the first in the same way Water relates to Thirst.
- Q11. (B) M is letter 13 and A is letter 1 and P is letter 16, so $MAP = 13 - 1 - 16$.
- Q12. (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.
- Q13. (D) In alphabetical order the words run mango, marble, melon, museum, so mango comes first.
- Q14. (D) The rule is: square the first number and add the second. Check: 8, 4 gives 68 and 8, 6 gives 70; so 4, 6 gives 22.
- Q15. (B) The second number is the first multiplied by itself: $10 \times 10 = 100$, so $11 \times 11 = 121$.
- Q16. (B) Every other number is a multiple of 6. 26 is not.
- Q17. (D) Every triangle has apex A and two of the 4 base points as its other corners. Choosing 2 from 4 gives 6 triangles.
- Q18. (B) Bat is a mammal, not a bird.
- Q19. (C) From "All metals conduct electricity. Copper is a metal." it follows necessarily that copper conducts electricity.
- Q20. (A) The gaps grow by one each time (+2, +3, +4, +5), so after P the next letter is U.
- Q21. (C) The two 9 m walks (north, then south) cancel out, leaving only the 2 m walked towards the east. So the answer is 2 m, East.
- Q22. (C) The father is $16 + 18 = 34$ now, so after 4 years he will be $34 + 4 = 38$ years.
- Q23. (A) Subtracting 10 from 70 gives 60.
- Q24. (B) 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.
- Q25. (D) Counting lines of symmetry: regular pentagon has 5, rectangle has 2, equilateral triangle has 3, regular hexagon has 6. The answer is figure (D).
- Q26. (D) Each number is 8 more than the one before it, so the next is $54 + 8 = 62$.
- Q27. (C) Position from the right = total - position from the left + 1 = $26 - 22 + 1 = 5$ th.
- Q28. (A) Each letter moves 3 place(s) forward in the alphabet, so CAT becomes FDW.
- Q29. (D) Counting Suresh only once: $6 + 9 - 1 = 14$ people.
- Q30. (B) 17 days later is 2 week(s) and 3 day(s), so the day moves 3 place(s) on from Saturday to Tuesday.
- Q31. (C) Each number is doubled and 3 is added: $45 \times 2 + 3 = 93$.
- Q32. (B) Each letter moves 2 place(s) forward in the alphabet, so after P comes R.
- Q33. (A) $16 + 16 - 10 = 22$. The 10 who play both were counted twice, so they are subtracted once.
- Q34. (B) Nest is where a bird lives or belongs, in the same way Hive goes with bee.
- Q35. (C) B is letter 2 and U is letter 21 and S is letter 19, so $BUS = 2 - 21 - 19$.
- Q36. (C) Anjali's paternal grandfather's only son is Anjali's own father, so that man's son is Anjali's own sibling. The answer is Brother.
- Q37. (C) The rule is: multiply the two numbers, then add 3. Check: 9, 3 gives 30 and 4, 9 gives 39; so 7, 6 gives 45.

- Q38. (C) The second number is the first multiplied by itself: $7 \times 7 = 49$, so $11 \times 11 = 121$.
- Q39. (C) The 3 m south cancels part of the 8 m north, leaving $8 - 3 = 5$ m north, and the 5 m east is unchanged. So Nila is 5 m north and 5 m east.
- Q40. (C) Every other number is a multiple of 7. 55 is not.
- Q41. (B) From "All roses are flowers. All flowers need water." it follows necessarily that all roses need water.
- Q42. (A) The two 6 m walks (north, then south) cancel out, leaving only the 4 m walked towards the east. So the answer is 4 m, East.
- Q43. (A) The father is $14 + 20 = 34$ now, so after 2 years he will be $34 + 2 = 36$ years.
- Q44. (B) Subtracting 2 from 12 gives 10.
- Q45. (A) Counting lines of symmetry: square has 4, regular pentagon has 5, equilateral triangle has 3, regular hexagon has 6. The answer is figure (A).
- Q46. (A) $15 + 5 + 30 + 15 + 20 = 85$ books.
- Q47. (D) A 4-digit number cannot begin with 0, so the smallest possible first digit is 1. The remaining digits are then placed in increasing order: 1049.
- Q48. (C) Substances dissolve faster in hotter water because its particles move faster. The answer is The glass at 80°C .
- Q49. (B) The 4 numbers add up to $35 \times 4 = 140$. The given numbers add up to 103, so the missing number is $140 - 103 = 37$.
- Q50. (A) The gaps grow 2, 4, 6, 8, so the next gap is 10 and $23 + 10 = 33$.

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