

Class 8 · 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.

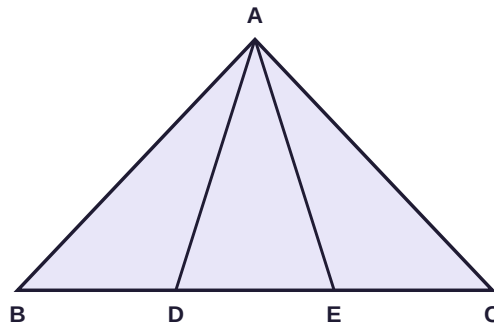
Logical Reasoning

45 questions · 1 mark each · 45 marks

Q1. Find the odd one out: 12, 18, 21, 27, 34

- (A) 18 (B) 12 (C) 34 (D) 27

Q2. How many triangles are there in the given figure?



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

Q3. Which letter comes next? E, G, J, N, ____

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

Q4. Which one does NOT belong with the others?

- (A) July (B) August (C) April (D) March

Q5. Doctor : Hospital :: Teacher : ____

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

Q6. In the first row the numbers are 8, 7 and 71. In the second row they are 9, 9 and 90. In the third row they are 7, 8 and ____ . The same rule applies to every row.

- (A) 56 (B) 58 (C) 59 (D) 57

Q7. In a queue, Deep is 8th from the front and 12th from the back. How many people are in the queue altogether?

- (A) 18 (B) 21 (C) 20 (D) 19

Q8. If the 10th of a month is a Saturday, what day of the week is the 19th of the same month?

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

Q9. In a certain code BUS is written as CVT. How is SUN written in that code?

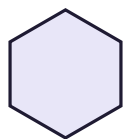
- (A) OVT (B) RTM (C) TVO (D) UWP

- Q10. Three of the following four are alike and form a group. Which one does NOT belong?
 (A) Cow (B) Pigeon (C) Sparrow (D) Parrot
- Q11. Count backward in 2s: 20, 18, 16, 14, ____
 (A) 13 (B) 10 (C) 14 (D) 12
- Q12. A father is 8 years older than his son. The son is 12 years old now. How old will the father be after 3 years?
 (A) 20 years (B) 26 years (C) 23 years (D) 24 years
- Q13. 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) All conductors are copper.
 (C) Copper conducts electricity. (D) Copper does not conduct electricity.
- Q14. Pointing to a boy in a photograph, Rahul said, "He is the son of my paternal grandfather's only son." How is the boy related to Rahul?
 (A) Uncle (B) Nephew (C) Cousin (D) Brother
- Q15. If JAR is written as 10 - 1 - 18 using the positions of the letters in the alphabet, how is INK written?
 (A) 9 - 14 - 11 (B) 18 - 13 - 16 (C) 10 - 15 - 12 (D) 11 - 14 - 9
- Q16. In a row of 30 children, Sana is 17th from the left end. What is Sana's position from the right end?
 (A) 15th (B) 14th (C) 13th (D) 16th
- Q17. Which word would come FIRST in a dictionary?
 (A) monkey (B) matter (C) metal (D) minute
- Q18. Arjun walks 7 m towards north, turns right and walks 5 m, then turns right again and walks 7 m. How far is Arjun from the starting point, and in which direction?
 (A) 5 m, East (B) 12 m, North (C) 7 m, East (D) 5 m, West
- Q19. In a class, 20 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) 27 (B) 28 (C) 21 (D) 33
- Q20. Find the next number in the pattern: 3, 8, 18, 38, ____
 (A) 76 (B) 80 (C) 78 (D) 79
- Q21. 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) E (C) B (D) C
- Q22. Which letter comes next? A, C, E, G, ____
 (A) I (B) K (C) J (D) H
- Q23. Arun walks 10 m north, then 6 m east, then 3 m south. Where is Arun now, relative to the starting point?
 (A) 7 m north and 7 m east (B) 7 m north and 6 m east
 (C) 8 m north and 6 m east (D) 10 m north and 6 m east

Q24. Find the next number in the pattern: 29, 36, 43, 50, ____

- (A) 58 (B) 57 (C) 50 (D) 64

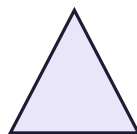
Q25. Which of these figures has exactly 4 lines of symmetry?



(A)



(B)



(C)



(D)

Q26. $3 : 9 :: 9 : \underline{\hspace{1cm}}$

- (A) 81 (B) 64 (C) 18 (D) 100

Q27. Find the odd one out: 36, 45, 72, 84, 99

- (A) 84 (B) 72 (C) 45 (D) 99

Q28. Which letter comes next? F, H, K, O, ____

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

Q29. Bird : Nest :: Bee : ____

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

Q30. In the first row the numbers are 9, 3 and 29. In the second row they are 8, 3 and 26. In the third row they are 7, 2 and ____ . The same rule applies to every row.

- (A) 18 (B) 17 (C) 16 (D) 15

Q31. In a queue, Farah is 4th from the front and 12th from the back. How many people are in the queue altogether?

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

Q32. If the 15th of a month is a Monday, what day of the week is the 26th of the same month?

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

Q33. In a certain code HAT is written as LEX. How is CUP written in that code?

- (A) YQL (B) TYG (C) HZU (D) GYT

Q34. Count backward in 3s: 18, 15, 12, 9, ____

- (A) 7 (B) 3 (C) 6 (D) 9

Q35. A father is 7 years older than his son. The son is 10 years old now. How old will the father be after 7 years?

- (A) 17 years (B) 31 years (C) 25 years (D) 24 years

Q36. 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) Some roses do not need water.
(C) All roses need water. (D) All flowers are roses.

Q37. If FAN is written as 6 - 1 - 14 using the positions of the letters in the alphabet, how is CAT written?

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

Q38. In a row of 24 children, Imran is 17th from the left end. What is Imran's position from the right end?

- (A) 8th (B) 7th (C) 9th (D) 10th

Q39. Meera walks 4 m towards north, turns right and walks 7 m, then turns right again and walks 4 m. How far is Meera from the starting point, and in which direction?

- (A) 7 m, East (B) 7 m, West (C) 4 m, East (D) 11 m, North

Q40. In a class, 19 students play cricket, 21 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) 35 (B) 28 (C) 34 (D) 40

Q41. Which letter comes next? M, O, Q, S, ____

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

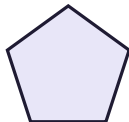
Q42. Find the next number in the pattern: 7, 16, 25, 34, ____

- (A) 43 (B) 52 (C) 44 (D) 34

Q43. Which of these figures has exactly 5 lines of symmetry?



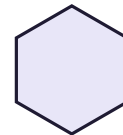
(A)



(B)



(C)



(D)

Q44. $5 : 25 :: 11 : \underline{\hspace{1cm}}$

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

Q45. Find the odd one out: 27, 45, 54, 96, 99

- (A) 96 (B) 54 (C) 45 (D) 27

Achievers Section

5 questions · 3 marks each · 15 marks

Q46. Rahul finished the puzzle in two minutes and said it was 'to let the cat out of the bag'. What did he mean?

- (A) to reveal a secret (B) to buy a pet
(C) to make a mistake (D) to lose something

Q47. Using each of the digits 0, 1, 3, 8 exactly once, what is the smallest 4-digit number that can be formed?

- (A) 0138 (B) 8310 (C) 1038 (D) 1047

Q48. The clock in the figure shows 9:30. What is the angle between the hour hand and the minute hand?



- (A) 90° (B) 105° (C) 120° (D) 135°

Q49. The average of 5 numbers is 34. 4 of them are 9, 103, 36, 12. What is the remaining number?

- (A) 10 (B) 34 (C) 8 (D) 12

Q50. If RING is coded as ULQJ, how is GATE coded?

- (A) MGZK (B) JDWH (C) HWDJ (D) DXQB

Answer Key

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

Solutions

Q1. (C) Every other number is a multiple of 3. 34 is not.

Q2. (C) Every triangle has apex A and two of the 4 base points as its other corners. Choosing 2 from 4 gives 6 triangles.

Q3. (B) The gaps grow by one each time (+2, +3, +4, +5), so after N the next letter is S.

Q4. (C) April has 30 days while the others have 31.

Q5. (C) The second word relates to the first in the same way School relates to Teacher.

Q6. (D) The rule is: square the first number and add the second. Check: 8, 7 gives 71 and 9, 9 gives 90; so 7, 8 gives 57.

Q7. (D) Counting Deep only once: $8 + 12 - 1 = 19$ people.

Q8. (D) 9 days later is 1 week(s) and 2 day(s), so the day moves 2 place(s) on from Saturday to Monday.

- Q9. (C) Each letter moves 1 place(s) forward in the alphabet, so SUN becomes TVO.
- Q10. (A) Sparrow, Parrot, Pigeon are all birds; Cow is not.
- Q11. (D) Subtracting 2 from 14 gives 12.
- Q12. (C) The father is $12 + 8 = 20$ now, so after 3 years he will be $20 + 3 = 23$ years.
- Q13. (C) From "All metals conduct electricity. Copper is a metal." it follows necessarily that copper conducts electricity.
- Q14. (D) Rahul's paternal grandfather's only son is Rahul's own father, so that man's son is Rahul's own sibling. The answer is Brother.
- Q15. (A) I is letter 9 and N is letter 14 and K is letter 11, so $INK = 9 - 14 - 11$.
- Q16. (B) Position from the right = total - position from the left + 1 = $30 - 17 + 1 = 14$ th.
- Q17. (B) In alphabetical order the words run matter, metal, minute, monkey, so matter comes first.
- Q18. (A) The two 7 m walks (north, then south) cancel out, leaving only the 5 m walked towards the east. So the answer is 5 m, East.
- Q19. (A) $20 + 13 - 6 = 27$. The 6 who play both were counted twice, so they are subtracted once.
- Q20. (C) Each number is doubled and 2 is added: $38 \times 2 + 2 = 78$.
- Q21. (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.
- Q22. (A) Each letter moves 2 place(s) forward in the alphabet, so after G comes I.
- Q23. (B) The 3 m south cancels part of the 10 m north, leaving $10 - 3 = 7$ m north, and the 6 m east is unchanged. So Arun is 7 m north and 6 m east.
- Q24. (B) Each number is 7 more than the one before it, so the next is $50 + 7 = 57$.
- Q25. (D) Counting lines of symmetry: regular hexagon has 6, rectangle has 2, equilateral triangle has 3, square has 4. The answer is figure (D).
- Q26. (A) The second number is the first multiplied by itself: $3 \times 3 = 9$, so $9 \times 9 = 81$.
- Q27. (A) Every other number is a multiple of 9. 84 is not.
- Q28. (D) The gaps grow by one each time (+2, +3, +4, +5), so after O the next letter is T.
- Q29. (D) Nest is where a bird lives or belongs, in the same way Hive goes with bee.
- Q30. (C) The rule is: multiply the two numbers, then add 2. Check: 9, 3 gives 29 and 8, 3 gives 26; so 7, 2 gives 16.
- Q31. (B) Counting Farah only once: $4 + 12 - 1 = 15$ people.
- Q32. (A) 11 days later is 1 week(s) and 4 day(s), so the day moves 4 place(s) on from Monday to Friday.
- Q33. (D) Each letter moves 4 place(s) forward in the alphabet, so CUP becomes GYT.
- Q34. (C) Subtracting 3 from 9 gives 6.
- Q35. (D) The father is $10 + 7 = 17$ now, so after 7 years he will be $17 + 7 = 24$ years.
- Q36. (C) From "All roses are flowers. All flowers need water." it follows necessarily that all roses need water.
- Q37. (A) C is letter 3 and A is letter 1 and T is letter 20, so $CAT = 3 - 1 - 20$.
- Q38. (A) Position from the right = total - position from the left + 1 = $24 - 17 + 1 = 8$ th.
- Q39. (A) The two 4 m walks (north, then south) cancel out, leaving only the 7 m walked towards the east. So the answer is 7 m, East.
- Q40. (C) $19 + 21 - 6 = 34$. The 6 who play both were counted twice, so they are subtracted once.
- Q41. (D) Each letter moves 2 place(s) forward in the alphabet, so after S comes U.
- Q42. (A) Each number is 9 more than the one before it, so the next is $34 + 9 = 43$.
- Q43. (B) Counting lines of symmetry: rectangle has 2, regular pentagon has 5, square has 4, regular hexagon has 6. The answer is figure (B).
- Q44. (C) The second number is the first multiplied by itself: $5 \times 5 = 25$, so $11 \times 11 = 121$.
- Q45. (A) Every other number is a multiple of 9. 96 is not.

Q46. (A) In this sentence 'to let the cat out of the bag' means to reveal a secret.

Q47. (C) 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: 1038.

Q48. (B) The minute hand is at 180° from 12 and the hour hand at 285° from 12, so the angle between them is 105° .

Q49. (A) The 5 numbers add up to $34 \times 5 = 170$. The given numbers add up to 160, so the missing number is $170 - 160 = 10$.

Q50. (B) Every letter moves 3 place(s) forward, so GATE becomes JDWH.

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