

Class 9 · 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. In a row of 32 children, Imran is 8th from the left end. What is Imran's position from the right end?

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

Q2. Kabir walks 3 m towards north, turns right and walks 8 m, then turns right again and walks 3 m. How far is Kabir from the starting point, and in which direction?

- (A) 8 m, West (B) 8 m, East (C) 3 m, East (D) 11 m, North

Q3. Sima walks 4 m north, then 5 m east, then 2 m south. Where is Sima now, relative to the starting point?

- (A) 2 m north and 5 m east (B) 2 m north and 6 m east
(C) 4 m north and 5 m east (D) 3 m north and 5 m east

Q4. Which letter comes next? E, I, M, Q, ____

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

Q5. Three of the following four are alike and form a group. Which one does NOT belong?

- (A) Apple (B) Guava (C) Banana (D) Potato

Q6. A father is 15 years older than his son. The son is 11 years old now. How old will the father be after 5 years?

- (A) 32 years (B) 36 years (C) 31 years (D) 26 years

Q7. In a class, 16 students play cricket, 22 play football and 7 play both games. Every student plays at least one of the two. How many students are there in the class?

- (A) 38 (B) 31 (C) 24 (D) 32

Q8. Which word would come FIRST in a dictionary?

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

Q9. Read the statements and choose the conclusion that MUST be true.

Every student in the class has a pencil. Rahul is a student in the class.

- (A) Rahul has a pencil. (B) Rahul has no pencil.
(C) Some students have no pencil. (D) Only Rahul has a pencil.

Q10. In the first row the numbers are 4, 4 and 17. In the second row they are 3, 4 and 13. In the third row they are 7, 7 and ____ . The same rule applies to every row.

- (A) 52 (B) 51 (C) 50 (D) 49

Q11. Find the next number in the pattern: 27, 37, 47, 57, ____

- (A) 67 (B) 77 (C) 68 (D) 57

Q12. Which letter comes next? D, F, I, M, ____

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

Q13. Which one does NOT belong with the others?

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

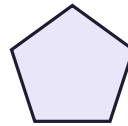
Q14. Which of these figures has exactly 2 lines of symmetry?



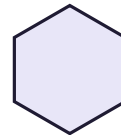
(A)



(B)



(C)



(D)

Q15. Find the odd one out: 14, 24, 30, 36, 54

- (A) 24 (B) 14 (C) 54 (D) 30

Q16. Find the next number in the pattern: 5, 13, 29, 61, ____

- (A) 128 (B) 122 (C) 125 (D) 123

Q17. $5 : 25 :: 7 : \underline{\hspace{1cm}}$

- (A) 49 (B) 14 (C) 36 (D) 64

Q18. In a queue, Nita is 12th from the front and 9th from the back. How many people are in the queue altogether?

- (A) 19 (B) 22 (C) 21 (D) 20

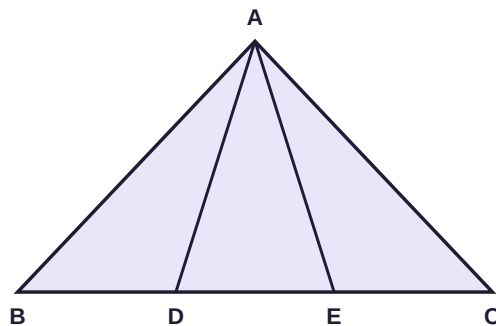
Q19. Count backward in 3s: 33, 30, 27, 24, ____

- (A) 24 (B) 18 (C) 21 (D) 22

Q20. Pen : Write :: Knife : ____

- (A) Sleep (B) Cut (C) Sing (D) Run

Q21. How many triangles are there in the given figure?



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

Q22. 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

Q23. In a certain code BUS is written as EXV. How is CAT written in that code?

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

Q24. 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) Cousin (B) Nephew (C) Brother (D) Uncle

Q25. If the 10th of a month is a Sunday, what day of the week is the 23th of the same month?

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

Q26. If RAT is written as 18 - 1 - 20 using the positions of the letters in the alphabet, how is MAP written?

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

Q27. In a row of 42 children, Imran is 21th from the left end. What is Imran's position from the right end?

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

Q28. Riya walks 9 m towards north, turns right and walks 4 m, then turns right again and walks 9 m. How far is Riya from the starting point, and in which direction?

- (A) 4 m, West (B) 13 m, North (C) 9 m, East (D) 4 m, East

Q29. Nila walks 9 m north, then 7 m east, then 6 m south. Where is Nila now, relative to the starting point?

- (A) 4 m north and 7 m east (B) 3 m north and 8 m east
(C) 3 m north and 7 m east (D) 9 m north and 7 m east

Q30. Which letter comes next? F, I, L, O, ____

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

Q31. A father is 19 years older than his son. The son is 20 years old now. How old will the father be after 4 years?

- (A) 39 years (B) 47 years (C) 44 years (D) 43 years

Q32. In a class, 12 students play cricket, 17 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) 25 (B) 29 (C) 19 (D) 24

Q33. Read the statements and choose the conclusion that **MUST** be true.

All squares are rectangles. All rectangles have four sides.

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

Q34. In the first row the numbers are 9, 2 and 15. In the second row they are 9, 4 and 33. In the third row they are 6, 2 and ____ . The same rule applies to every row.

- (A) 10 (B) 11 (C) 8 (D) 9

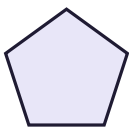
Q35. Find the next number in the pattern: 19, 24, 29, 34, ____

- (A) 39 (B) 34 (C) 44 (D) 40

Q36. Which letter comes next? A, C, F, J, ____

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

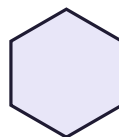
Q37. Which of these figures has exactly 5 lines of symmetry?



(A)



(B)



(C)



(D)

Q38. Find the next number in the pattern: 2, 5, 11, 23, ____

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

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

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

Q40. In a queue, Suresh is 6th from the front and 12th from the back. How many people are in the queue altogether?

- (A) 19 (B) 17 (C) 18 (D) 16

Q41. Count backward in 3s: 39, 36, 33, 30, ____

- (A) 30 (B) 28 (C) 24 (D) 27

Q42. Doctor : Hospital :: Teacher : ____

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

Q43. In a certain code HAT is written as IBU. How is CUP written in that code?

- (A) BTO (B) QVD (C) DVQ (D) EWR

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

Q45. If the 12th of a month is a Monday, what day of the week is the 21st of the same month?

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

Achievers Section

5 questions · 3 marks each · 15 marks

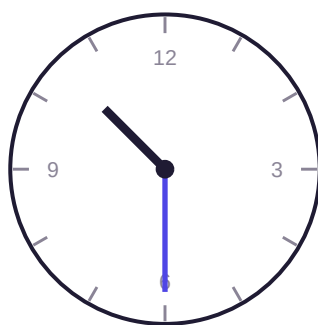
Q46. Rahul finished the puzzle in two minutes and said it was 'to break the ice'. What did he mean?

- (A) to spoil a plan (B) to feel cold
(C) to go skating (D) to start a conversation

Q47. Find the next number: 1, 3, 7, 13, 21, ____

- (A) 29 (B) 31 (C) 32 (D) 33

Q48. The clock in the figure shows 10:30. What is the angle between the hour hand and the minute hand?



- (A) 165° (B) 120° (C) 135° (D) 150°

Q49. Using each of the digits 1, 2, 0, 8 exactly once, what is the smallest 4-digit number that can be formed?

- (A) 1028 (B) 0128 (C) 1037 (D) 8210

Q50. If DESK is coded as FGUM, how is WIND coded?

- (A) YKPF (B) UGLB (C) AMRH (D) FPKY

Answer Key

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

Solutions

Q1. (C) Position from the right = total - position from the left + 1 = $32 - 8 + 1 = 25$ th.

Q2. (B) The two 3 m walks (north, then south) cancel out, leaving only the 8 m walked towards the east. So the answer is 8 m, East.

Q3. (A) The 2 m south cancels part of the 4 m north, leaving $4 - 2 = 2$ m north, and the 5 m east is unchanged. So Sima is 2 m north and 5 m east.

Q4. (D) Each letter moves 4 place(s) forward in the alphabet, so after Q comes U.

Q5. (D) Banana, Guava, Apple are all fruits; Potato is not.

Q6. (C) The father is $11 + 15 = 26$ now, so after 5 years he will be $26 + 5 = 31$ years.

Q7. (B) $16 + 22 - 7 = 31$. The 7 who play both were counted twice, so they are subtracted once.

- Q8. (B) In alphabetical order the words run marble, matter, melon, museum, so marble comes first.
- Q9. (A) From "Every student in the class has a pencil. Rahul is a student in the class." it follows necessarily that rahul has a pencil.
- Q10. (C) The rule is: multiply the two numbers, then add 1. Check: 4, 4 gives 17 and 3, 4 gives 13; so 7, 7 gives 50.
- Q11. (A) Each number is 10 more than the one before it, so the next is $57 + 10 = 67$.
- Q12. (B) The gaps grow by one each time (+2, +3, +4, +5), so after M the next letter is R.
- Q13. (B) Bat is a mammal, not a bird.
- Q14. (A) Counting lines of symmetry: rectangle has 2, square has 4, regular pentagon has 5, regular hexagon has 6. The answer is figure (A).
- Q15. (B) Every other number is a multiple of 6. 14 is not.
- Q16. (C) Each number is doubled and 3 is added: $61 \times 2 + 3 = 125$.
- Q17. (A) The second number is the first multiplied by itself: $5 \times 5 = 25$, so $7 \times 7 = 49$.
- Q18. (D) Counting Nita only once: $12 + 9 - 1 = 20$ people.
- Q19. (C) Subtracting 3 from 24 gives 21.
- Q20. (B) The second word relates to the first in the same way Cut relates to Knife.
- Q21. (D) Every triangle has apex A and two of the 4 base points as its other corners. Choosing 2 from 4 gives 6 triangles.
- Q22. (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.
- Q23. (B) Each letter moves 3 place(s) forward in the alphabet, so CAT becomes FDW.
- Q24. (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.
- Q25. (D) 13 days later is 1 week(s) and 6 day(s), so the day moves 6 place(s) on from Sunday to Saturday.
- Q26. (D) M is letter 13 and A is letter 1 and P is letter 16, so $MAP = 13 - 1 - 16$.
- Q27. (A) Position from the right = total - position from the left + 1 = $42 - 21 + 1 = 22$ th.
- Q28. (D) The two 9 m walks (north, then south) cancel out, leaving only the 4 m walked towards the east. So the answer is 4 m, East.
- Q29. (C) The 6 m south cancels part of the 9 m north, leaving $9 - 6 = 3$ m north, and the 7 m east is unchanged. So Nila is 3 m north and 7 m east.
- Q30. (A) Each letter moves 3 place(s) forward in the alphabet, so after O comes R.
- Q31. (D) The father is $20 + 19 = 39$ now, so after 4 years he will be $39 + 4 = 43$ years.
- Q32. (D) $12 + 17 - 5 = 24$. The 5 who play both were counted twice, so they are subtracted once.
- Q33. (A) From "All squares are rectangles. All rectangles have four sides." it follows necessarily that all squares have four sides.
- Q34. (D) The rule is: multiply the two numbers, then subtract 3. Check: 9, 2 gives 15 and 9, 4 gives 33; so 6, 2 gives 9.
- Q35. (A) Each number is 5 more than the one before it, so the next is $34 + 5 = 39$.
- Q36. (B) The gaps grow by one each time (+2, +3, +4, +5), so after J the next letter is O.
- Q37. (A) Counting lines of symmetry: regular pentagon has 5, rectangle has 2, regular hexagon has 6, square has 4. The answer is figure (A).
- Q38. (A) Each number is doubled and 1 is added: $23 \times 2 + 1 = 47$.
- Q39. (B) The second number is the first multiplied by itself: $6 \times 6 = 36$, so $11 \times 11 = 121$.
- Q40. (B) Counting Suresh only once: $6 + 12 - 1 = 17$ people.
- Q41. (D) Subtracting 3 from 30 gives 27.
- Q42. (B) The second word relates to the first in the same way School relates to Teacher.

- Q43. (C) Each letter moves 1 place(s) forward in the alphabet, so CUP becomes DVQ.
- Q44. (B) 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. (D) 9 days later is 1 week(s) and 2 day(s), so the day moves 2 place(s) on from Monday to Wednesday.
- Q46. (D) In this sentence 'to break the ice' means to start a conversation.
- Q47. (B) The gaps grow 2, 4, 6, 8, so the next gap is 10 and $21 + 10 = 31$.
- Q48. (C) The minute hand is at 180° from 12 and the hour hand at 315° from 12, so the angle between them is 135° .
- Q49. (A) 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: 1028.
- Q50. (A) Every letter moves 2 place(s) forward, so WIND becomes YKPF.

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