

Class 10 · 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. Three of the following four are alike and form a group. Which one does NOT belong?

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

Q2. If TIN is written as 20 - 9 - 14 using the positions of the letters in the alphabet, how is CAT written?

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

Q3. If the 15th of a month is a Sunday, what day of the week is the 31st of the same month?

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

Q4. In a row of 40 children, Imran is 4th from the left end. What is Imran's position from the right end?

- (A) 37th (B) 38th (C) 36th (D) 39th

Q5. Which letter comes next? B, D, G, K, ____

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

Q6. Find the next number in the pattern: 2, 5, 11, 23, ____

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

Q7. In a class, 14 students play cricket, 17 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) 31 (B) 25 (C) 26 (D) 19

Q8. 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.

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) E (B) D (C) B (D) C

Q10. Which word would come FIRST in a dictionary?

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

Q11. 10 : 100 :: 5 : ____

- (A) 10 (B) 16 (C) 25 (D) 36

Q12. In the first row the numbers are 6, 8 and 50. In the second row they are 8, 9 and 74. In the third row they are 2, 6 and ____ . The same rule applies to every row.

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

Q13. Count backward in 3s: 33, 30, 27, 24, ____

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

Q14. In a certain code FAN is written as HCP. How is MAP written in that code?

- (A) OCR (B) RCO (C) PDS (D) KYN

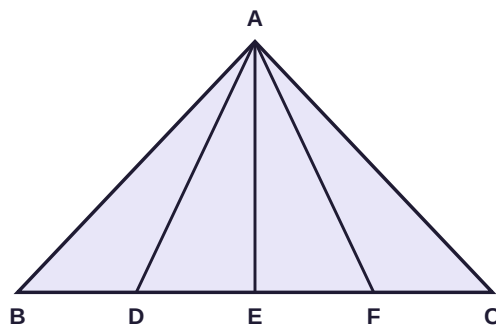
Q15. Which letter comes next? D, H, L, P, ____

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

Q16. In a queue, Deep is 10th from the front and 5th from the back. How many people are in the queue altogether?

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

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



- (A) 9 (B) 10 (C) 12 (D) 11

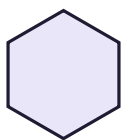
Q18. Find the odd one out: 6, 9, 15, 20, 21

- (A) 21 (B) 15 (C) 20 (D) 9

Q19. Kabir walks 4 m towards north, turns right and walks 7 m, then turns right again and walks 4 m. How far is Kabir from the starting point, and in which direction?

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

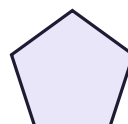
Q20. Which of these figures has exactly 5 lines of symmetry?



(A)



(B)



(C)



(D)

Q21. A father is 12 years older than his son. The son is 20 years old now. How old will the father be after 8 years?

- (A) 41 years (B) 48 years (C) 40 years (D) 32 years

Q22. Find the next number in the pattern: 12, 14, 16, 18, ____

- (A) 21 (B) 20 (C) 22 (D) 18

Q23. 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) Nephew (B) Brother (C) Uncle (D) Cousin

Q24. Arun walks 3 m north, then 9 m east, then 2 m south. Where is Arun now, relative to the starting point?

- (A) 1 m north and 9 m east (B) 3 m north and 9 m east
(C) 2 m north and 9 m east (D) 1 m north and 10 m east

Q25. Which one does NOT belong with the others?

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

Q26. Doctor : Hospital :: Teacher : ____

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

Q27. If RAT is written as 18 - 1 - 20 using the positions of the letters in the alphabet, how is SUN written?

- (A) 20 - 22 - 15 (B) 8 - 6 - 13 (C) 19 - 21 - 14 (D) 14 - 21 - 19

Q28. If the 10th of a month is a Saturday, what day of the week is the 26th of the same month?

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

Q29. In a row of 34 children, Arjun is 9th from the left end. What is Arjun's position from the right end?

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

Q30. Which letter comes next? A, C, F, J, ____

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

Q31. Find the next number in the pattern: 2, 6, 14, 30, ____

- (A) 64 (B) 63 (C) 62 (D) 60

Q32. In a class, 19 students play cricket, 10 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) 23 (B) 17 (C) 29 (D) 24

Q33. 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) Some squares have three sides. (D) All squares have four sides.

Q34. 8 : 64 :: 10 : ____

- (A) 81 (B) 100 (C) 121 (D) 20

Q35. Count backward in 3s: 18, 15, 12, 9, ____

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

Q36. In a certain code BUS is written as CVT. How is BAT written in that code?

- (A) AZS (B) UBC (C) DCV (D) CBU

Q37. Which letter comes next? B, D, F, H, ____

- (A) J (B) I (C) L (D) K

Q38. In a queue, Suresh is 10th from the front and 11th from the back. How many people are in the queue altogether?

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

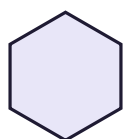
Q39. Find the odd one out: 10, 20, 24, 28, 32

- (A) 32 (B) 10 (C) 24 (D) 28

Q40. Anita walks 7 m towards north, turns right and walks 3 m, then turns right again and walks 7 m. How far is Anita from the starting point, and in which direction?

- (A) 7 m, East (B) 3 m, East (C) 3 m, West (D) 10 m, North

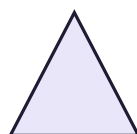
Q41. Which of these figures has exactly 2 lines of symmetry?



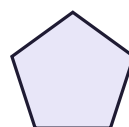
(A)



(B)



(C)



(D)

Q42. A father is 9 years older than his son. The son is 12 years old now. How old will the father be after 2 years?

- (A) 21 years (B) 23 years (C) 24 years (D) 25 years

Q43. Find the next number in the pattern: 6, 10, 14, 18, ____

- (A) 23 (B) 18 (C) 26 (D) 22

Q44. 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) Nephew (B) Uncle (C) Cousin (D) Brother

Q45. Ravi walks 8 m north, then 5 m east, then 7 m south. Where is Ravi now, relative to the starting point?

- (A) 1 m north and 5 m east (B) 2 m north and 5 m east
(C) 1 m north and 6 m east (D) 8 m north and 5 m east

Achievers Section

5 questions · 3 marks each · 15 marks

Q46. Which pair is correctly matched?

- (A) Jaipur — Gujarat (B) Bhopal — Bihar
(C) Kolkata — West Bengal (D) Chennai — Kerala

Q47. The clock in the figure shows 11:30. What is the angle between the hour hand and the minute hand?



- (A) 180° (B) 150° (C) 165° (D) 195°

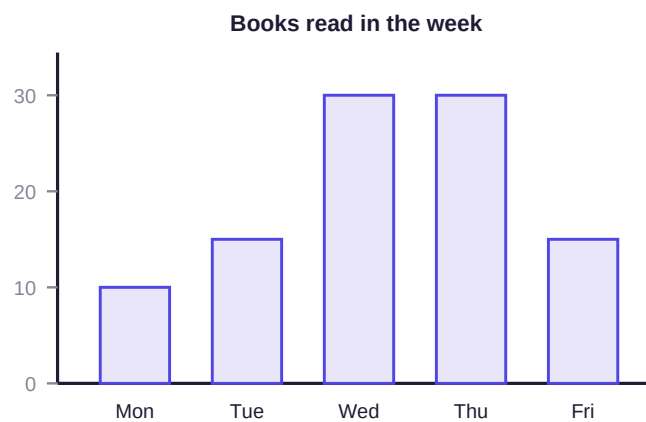
Q48. If FISH is coded as JMWL, how is MILK coded?

- (A) IEHG (B) OPMQ (C) QMPO (D) UQTS

Q49. A file is 2 megabytes. Roughly how many kilobytes is that?

- (A) About 2 KB (B) About 20 KB
(C) About 200 KB (D) About 2,000 KB

Q50. 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) 95 (B) 110 (C) 105 (D) 100

Answer Key

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

C	A	D	B	B	D	A	A	B	B
41	42	43	44	45	46	47	48	49	50
B	B	D	D	A	C	C	C	D	D

Solutions

Q1. (A) Silver, Gold, Iron are all metals; Wood is not.

Q2. (C) C is letter 3 and A is letter 1 and T is letter 20, so $CAT = 3 - 1 - 20$.

Q3. (D) 16 days later is 2 week(s) and 2 day(s), so the day moves 2 place(s) on from Sunday to Tuesday.

Q4. (A) Position from the right = total - position from the left + 1 = $40 - 4 + 1 = 37$ th.

Q5. (D) The gaps grow by one each time (+2, +3, +4, +5), so after K the next letter is P.

Q6. (C) Each number is doubled and 1 is added: $23 \times 2 + 1 = 47$.

Q7. (B) $14 + 17 - 6 = 25$. The 6 who play both were counted twice, so they are subtracted once.

Q8. (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.

Q9. (A) 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. (C) In alphabetical order the words run mango, maple, matter, melon, so mango comes first.

Q11. (C) The second number is the first multiplied by itself: $10 \times 10 = 100$, so $5 \times 5 = 25$.

Q12. (C) The rule is: multiply the two numbers, then add 2. Check: 6, 8 gives 50 and 8, 9 gives 74; so 2, 6 gives 14.

Q13. (C) Subtracting 3 from 24 gives 21.

Q14. (A) Each letter moves 2 place(s) forward in the alphabet, so MAP becomes OCR.

Q15. (B) Each letter moves 4 place(s) forward in the alphabet, so after P comes T.

Q16. (A) Counting Deep only once: $10 + 5 - 1 = 14$ people.

Q17. (B) Every triangle has apex A and two of the 5 base points as its other corners. Choosing 2 from 5 gives 10 triangles.

Q18. (C) Every other number is a multiple of 3. 20 is not.

Q19. (B) 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.

Q20. (C) Counting lines of symmetry: regular hexagon has 6, rectangle has 2, regular pentagon has 5, square has 4. The answer is figure (C).

Q21. (C) The father is $20 + 12 = 32$ now, so after 8 years he will be $32 + 8 = 40$ years.

Q22. (B) Each number is 2 more than the one before it, so the next is $18 + 2 = 20$.

Q23. (B) 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.

Q24. (A) The 2 m south cancels part of the 3 m north, leaving $3 - 2 = 1$ m north, and the 9 m east is unchanged. So Arun is 1 m north and 9 m east.

Q25. (D) April has 30 days while the others have 31.

Q26. (D) The second word relates to the first in the same way School relates to Teacher.

Q27. (C) S is letter 19 and U is letter 21 and N is letter 14, so $SUN = 19 - 21 - 14$.

Q28. (A) 16 days later is 2 week(s) and 2 day(s), so the day moves 2 place(s) on from Saturday to Monday.

Q29. (B) Position from the right = total - position from the left + 1 = $34 - 9 + 1 = 26$ th.

Q30. (D) The gaps grow by one each time (+2, +3, +4, +5), so after J the next letter is O.

Q31. (C) Each number is doubled and 2 is added: $30 \times 2 + 2 = 62$.

Q32. (A) $19 + 10 - 6 = 23$. The 6 who play both were counted twice, so they are subtracted once.

- Q33. (D) From "All squares are rectangles. All rectangles have four sides." it follows necessarily that all squares have four sides.
- Q34. (B) The second number is the first multiplied by itself: $8 \times 8 = 64$, so $10 \times 10 = 100$.
- Q35. (B) Subtracting 3 from 9 gives 6.
- Q36. (D) Each letter moves 1 place(s) forward in the alphabet, so BAT becomes CBU.
- Q37. (A) Each letter moves 2 place(s) forward in the alphabet, so after H comes J.
- Q38. (A) Counting Suresh only once: $10 + 11 - 1 = 20$ people.
- Q39. (B) Every other number is a multiple of 4. 10 is not.
- Q40. (B) The two 7 m walks (north, then south) cancel out, leaving only the 3 m walked towards the east. So the answer is 3 m, East.
- Q41. (B) Counting lines of symmetry: regular hexagon has 6, rectangle has 2, equilateral triangle has 3, regular pentagon has 5. The answer is figure (B).
- Q42. (B) The father is $12 + 9 = 21$ now, so after 2 years he will be $21 + 2 = 23$ years.
- Q43. (D) Each number is 4 more than the one before it, so the next is $18 + 4 = 22$.
- Q44. (D) 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.
- Q45. (A) The 7 m south cancels part of the 8 m north, leaving $8 - 7 = 1$ m north, and the 5 m east is unchanged. So Ravi is 1 m north and 5 m east.
- Q46. (C) Kolkata is the capital of West Bengal. Jaipur is in Rajasthan, Chennai in Tamil Nadu and Bhopal in Madhya Pradesh. The answer is Kolkata — West Bengal.
- Q47. (C) The minute hand is at 180° from 12 and the hour hand at 345° from 12, so the angle between them is 165° .
- Q48. (C) Every letter moves 4 place(s) forward, so MILK becomes QMPO.
- Q49. (D) 1 megabyte is about 1,000 kilobytes, so 2 MB is about 2,000 KB.
- Q50. (D) $10 + 15 + 30 + 30 + 15 = 100$ books.

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