

CLASS 7 - MATHS | SOF IMO-STYLE LEVEL 1

50 MCQs | Maximum Marks: 60 | Time: 60 minutes

Name: _____ Batch: _____ Date: _____

Choose one correct option. Q1-45: 1 mark each; Q46-50: 3 marks each. No negative marking.

All questions are compulsory. No calculators. Original Prodigy practice paper; not an official SOF paper.

LOGICAL REASONING

1. Find the next number: 1, 4, 7, 10, ...
(A) 14 (B) 13 (C) 11 (D) 12
2. If CAT is coded as DBU by shifting each letter one step forward, DOG is coded as:
(A) EPH (B) FPI (C) EOG (D) CNE
3. Which is the odd one out?
(A) Rectangle (B) Square (C) Triangle (D) Sphere
4. A student faces north, turns right, then right again. Which way does the student face?
(A) West (B) East (C) North (D) South
5. Complete the analogy: Hand : Glove :: Foot : ?
(A) Sock (B) Hat (C) Belt (D) Shirt
6. In a row of 25 students, Mira is 8th from the left. Her position from the right is:
(A) 17th (B) 18th (C) 19th (D) 16th
7. Find the next letters: AB, DE, GH, JK, ...
(A) OP (B) MN (C) LM (D) NO
8. P is Q's brother. Q is R's mother. P is R's:
(A) Son (B) Father (C) Maternal uncle (D) Grandfather
9. Select the next shape in the repeating pattern: ○, △, □, ○, △, □, ○, ...
(A) ○ (B) ◇ (C) △ (D) □
10. All roses are flowers. Some flowers are white. Which conclusion must follow?
(A) All white things are roses (B) All roses are white
(C) All roses are flowers (D) No rose is white
11. If + means multiplication and × means addition, evaluate $3 + 4 \times 2$ using the actual operations.
(A) 20 (B) 18 (C) 14 (D) 24
12. A clock shows 3:00. The smaller angle between its hands is:
(A) 60° (B) 180° (C) 90° (D) 120°
13. Four people stand in order P, Q, R, S from left to right. Q and S exchange positions. Who is immediately to the left of R?
(A) S (B) R (C) P (D) Q
14. Find the missing number: $(2,3) \rightarrow 13$; $(3,4) \rightarrow 25$; $(4,5) \rightarrow ?$ The same rule applies.
(A) 45 (B) 41 (C) 39 (D) 29
15. A cube's opposite face pairs are (1,6), (2,5), (3,4). If the top face is 2, the bottom face is:
(A) 3 (B) 6 (C) 1 (D) 5

MATHEMATICAL REASONING

16. Evaluate $36 \div 6 + 4 \times 3$.
(A) 30 (B) 24 (C) 10 (D) 18
17. The place value of 7 in 5,73,246 is:
(A) 70,000 (B) 7,000 (C) 7,00,000 (D) 700
18. The HCF of 18 and 24 is:
(A) 6 (B) 3 (C) 12 (D) 72
19. The LCM of 8 and 12 is:
(A) 48 (B) 24 (C) 96 (D) 4
20. Which fraction is equal to $\frac{3}{4}$?
(A) $\frac{9}{12}$ (B) $\frac{12}{9}$ (C) $\frac{3}{8}$ (D) $\frac{6}{12}$
21. Evaluate $\frac{2}{3} + \frac{1}{6}$.
(A) $\frac{5}{6}$ (B) $\frac{3}{9}$ (C) 1 (D) $\frac{1}{2}$
22. Evaluate $5.6 - 2.85$.
(A) 2.85 (B) 2.75 (C) 3.75 (D) 3.25
23. Evaluate $(-8) + 13$.
(A) -5 (B) 21 (C) -21 (D) 5
24. The additive inverse of -17 is:
(A) $\frac{1}{17}$ (B) -17 (C) 0 (D) 17
25. If $x + 9 = 23$, x equals:
(A) 16 (B) 14 (C) 32 (D) 12

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26. For $a = 3$, find $2a + 5$.
(A) 11 (B) 13 (C) 8 (D) 10
27. Simplify $4p + 3p - 2p$.
(A) 5 (B) $9p$ (C) p (D) $5p$
28. Two supplementary angles are 65° and:
(A) 125° (B) 115° (C) 25° (D) 65°
29. Two angles of a triangle are 50° and 60° . The third is:
(A) 90° (B) 70° (C) 110° (D) 80°
30. An equilateral triangle has each angle equal to:
(A) 90° (B) 60° (C) 120° (D) 45°
31. Which lengths can form a triangle?
(A) 5 cm, 6 cm, 7 cm (B) 3 cm, 3 cm, 7 cm (C) 1 cm, 2 cm, 4 cm (D) 2 cm, 3 cm, 5 cm
32. Two triangles have all three corresponding sides equal. Which congruence rule applies?
(A) ASA (B) AAA (C) SSS (D) RHS
33. The median of 3, 5, 8, 9, 10 is:
(A) 5 (B) 8 (C) 9 (D) 7
34. The mode of 2, 3, 3, 4, 5 is:
(A) 5 (B) 2 (C) 4 (D) 3
35. Which regular polygon can tile a plane by itself without gaps or overlaps?
(A) Regular octagon (B) Regular pentagon (C) Regular hexagon (D) Regular heptagon

EVERYDAY MATHEMATICS

36. A notebook costs ₹18. How much do 7 notebooks cost?
(A) ₹144 (B) ₹136 (C) ₹126 (D) ₹116
37. A rope 7.5 m long is cut by 2.8 m. Length remaining is:
(A) 4.3 m (B) 4.7 m (C) 5.3 m (D) 10.3 m
38. A tank is $\frac{3}{5}$ full. Another $\frac{1}{4}$ of its total capacity is added. The fraction now filled is:
(A) $\frac{7}{10}$ (B) $\frac{17}{20}$ (C) $\frac{4}{9}$ (D) $\frac{19}{20}$
39. A thermometer reads -4°C in the morning and rises by 9°C . It now reads:
(A) 5°C (B) -5°C (C) 13°C (D) -13°C

40. Three buses depart every 6, 8 and 12 minutes. If they leave together now, after how many minutes will they next leave together?
(A) 36 (B) 12 (C) 24 (D) 48

41. Four equal packets and a ₹12 delivery charge cost ₹100. Each packet costs:
(A) ₹18 (B) ₹28 (C) ₹22 (D) ₹25

42. A recipe uses $\frac{3}{4}$ cup of flour per batch. Flour required for 4 batches is:
(A) $\frac{3}{4}$ cup (B) 4 cups (C) 2 cups (D) 3 cups

43. A student reads 18, 22 and 20 pages on three days. The mean number of pages per day is:
(A) 20 (B) 21 (C) 22 (D) 18

44. A 24 cm strip is divided into three parts in the ratio 1:2:3. The longest part is:
(A) 6 cm (B) 8 cm (C) 12 cm (D) 16 cm

45. A rectangular border has length 12 m and breadth 8 m. Its perimeter is:
(A) 20 m (B) 48 m (C) 40 m (D) 96 m

ACHIEVERS SECTION (3 MARKS EACH)

46. A number is doubled, 5 is added, and the result is tripled to give 81. The original number is:
(A) 9 (B) 11 (C) 13 (D) 14

47. The angles of a triangle are x , $2x$ and $3x$. Its largest exterior angle is:
(A) 60° (B) 120° (C) 150° (D) 90°

48. A container is $\frac{2}{3}$ full. After 5 litres are removed, it is $\frac{1}{4}$ full. Its capacity is:
(A) 10 L (B) 15 L (C) 18 L (D) 12 L

49. Two consecutive integers have a sum of -15. Their product is:
(A) 56 (B) 72 (C) 64 (D) -56

50. In a tiling, three equal angles meet at each point and fill one complete turn. Each angle is 120° . Which regular polygon has this interior angle?
(A) Square (B) Regular hexagon (C) Equilateral triangle (D) Regular pentagon