STUDENT COPY · SET A

Class 7 · Mathematics Olympiad

Total questions	Total marks	Time	Negative marking
50	60	60 minutes	None

Name: _____ Class/Section: _____ Roll no: _____

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. Your teacher has the answers.
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Logical Reasoning

15 questions · 1 mark each · 15 marks

Q1. 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) C (C) D (D) B

Q2. Which one does NOT belong with the others?

(A) Gold (B) Silver (C) Wood (D) Copper

Q3. In a queue, Deep is 5th from the front and 5th from the back. How many people are in the queue altogether?

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

Q4. Ravi walks 10 m north, then 8 m east, then 8 m south. Where is Ravi now, relative to the starting point?

(A) 3 m north and 8 m east
(B) 2 m north and 8 m east
(C) 10 m north and 8 m east
(D) 2 m north and 9 m east

Q5. Which of these figures has exactly 4 lines of symmetry?



(A) (B) (C) (D)

Q6. If RAT is written as 18 - 1 - 20 using the positions of the letters in the alphabet, how is BAG written?

(A) 3 - 2 - 8 (B) 2 - 1 - 7 (C) 25 - 26 - 20 (D) 7 - 1 - 2

Q7. All but one of these numbers are multiples of the same number. Find the one that is not: 12, 21, 26, 27, 30

(A) 27 (B) 26 (C) 21 (D) 12

Q8. If the 15th of a month is a Sunday, what day of the week is the 24th of the same month?

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

Q9. In a class, 13 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) 26 (B) 21 (C) 14 (D) 20

Q10. Anita walks 7 m towards north, turns right and walks 6 m, then turns right again and walks 7 m. How far is Anita from the starting point, and in which direction?

(A) 13 m, North (B) 6 m, East (C) 6 m, West (D) 7 m, East

Q11. Read the statements and choose the conclusion that MUST be true.
All metals conduct electricity. Copper is a metal.

(A) Copper conducts electricity. (B) Copper does not conduct electricity.

(C) All conductors are copper. (D) Only copper is a metal.

Q12. Which letter comes next? O, Q, S, U, ___

(A) Y (B) X (C) V (D) W

Q13. A father is 26 years older than his son. The son is 16 years old now. How old will the father be after 3 years?

(A) 42 years (B) 45 years (C) 48 years (D) 46 years

Q14. Which word would come FIRST in a dictionary?

(A) monkey (B) marble (C) matter (D) mango

Q15. Which letter comes next? A, C, F, J, ___

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

Mathematical Reasoning

20 questions · 1 mark each · 20 marks

Q16. A cube of side 4 cm is painted on all faces and cut into 1 cm cubes. If one small cube is chosen, what is the probability that it has exactly 2 painted faces?

(A) 3/8 (B) 1/8 (C) 1/4 (D) 1/2

Q17. What is $(-2)^3 + 5^2 - 3\times(-4)$?

(A) 5 (B) 29 (C) 45 (D) -31

Q18. A number x is increased by 20%, then 6 is subtracted, giving 18. Which equation finds x?

(A) 1.2x - 6 = 18 (B) 1.2(x - 6) = 18

(C) x + 20 - 6 = 18 (D) 0.2x - 6 = 18

Q19. Which rational number is greater than -5/6 but less than -3/4?

(A) -2/3 (B) -19/24 (C) -3/4 (D) -7/8

Q20. In a triangle, two angles are in the ratio 2:3 and the third angle is 40°. What is the largest angle?

(A) 72° (B) 84° (C) 100° (D) 56°

Q21. If 4(x - 3) = 2x + 10, what is x?

(A) 11 (B) -11 (C) -1 (D) 5

Q22. Which pair of rational numbers has a product less than each of the two given numbers?

(A) -2/3 and 3/4 (B) 5/4 and 2/3

(C) 2/3 and 3/4 (D) -2/3 and -3/4

Q23. A cuboid has dimensions 4 cm, 3 cm and 2 cm. How many faces have area 12 cm^2?

(A) 6 (B) 2 (C) 1 (D) 4

Q24. A jacket marked ₹900 is sold at 10% discount. The seller gains 20%. What was its cost price?

(A) ₹729 (B) ₹720 (C) ₹675 (D) ₹750

Q25. On a number line, P is 4 steps left of -2. Q is double P. Which number is exactly halfway between P and Q?

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

Q26. A marked price is ₹800. A 10% discount is given, then 10% tax is added on the discounted price. What is the final price?

(A) ₹792 (B) ₹720 (C) ₹880 (D) ₹800

Q27. A triangle has two sides 4 cm and 9 cm. Which length can be its third side?

(A) 14 cm (B) 13 cm (C) 12 cm (D) 5 cm

Q28. At A and B of a triangle, the exterior angles supplementary to the interior angles are 120° and 135°. What is angle C?

(A) 15° (B) 75° (C) 255° (D) 105°

Q29. A shopkeeper marks an article ₹800 and gives 10% discount. He still gains 20%. What was his cost price?

(A) ₹640 (B) ₹720 (C) ₹600 (D) ₹880

Q30. For p=-2 and q=3, what is $2p^2 - 3pq + q^2$?

(A) -1 (B) 11 (C) 35 (D) 23

Q31. A transversal cuts two parallel lines. One interior angle is 112°. What are its alternate interior angle and co-interior partner?

(A) 68°, 68° (B) 112°, 112° (C) 112°, 68° (D) 68°, 112°

Q32. How many integer lengths can be the third side of a triangle with other sides 6 cm and 11 cm?

(A) 10 (B) 11 (C) 22 (D) 12

Q33. An article is marked 25% above cost price and sold at 10% discount. What is the profit percent?

(A) 35% (B) 15% (C) 10% (D) 12.5%

Q34. A triangle has sides 7 cm and 10 cm. Which length can be the third side but will NOT form an isosceles triangle?

(A) 10 cm (B) 17 cm (C) 4 cm (D) 3 cm

Q35. A regular hexagon is rotated about its centre. What is the smallest positive angle that makes it look unchanged?

(A) 60° (B) 120° (C) 30° (D) 90°

Everyday Mathematics

10 questions · 1 mark each · 10 marks

Q36. Neha deposits ₹5000 at 8% simple interest per year for 9 months. What interest will she get?

(A) ₹5300 (B) ₹400 (C) ₹360 (D) ₹300

Q37. A box has 3 red, 2 blue and 5 green pens. One pen is picked without looking. What is the probability it is not blue?

(A) 2/5 (B) 3/5 (C) 4/5 (D) 1/5

Q38. A sweet box has 4 layers, each layer has 4 rows, each row has 4 sweets. Which power gives the number of sweets?

(A) 4 × 3 = 12 sweets (B) 4^2 = 16 sweets

(C) 3^4 = 81 sweets (D) 4^3 = 64 sweets

Q39. Two straight roads cross. One acute angle is 68°. A traffic camera must cover both acute angles only. What total angle does it cover?

(A) 224° (B) 136° (C) 112° (D) 68°

Q40. A parallelogram flower bed has base 18 m, height 11 m and slant side 13 m. Grass costs ₹5 per m^2. What is the total cost?

(A) ₹1170 (B) ₹990 (C) ₹310 (D) ₹720

Q41. Aman lends ₹6000 at 8% per year simple interest. How much interest is due after 9 months?

(A) ₹400 (B) ₹540 (C) ₹480 (D) ₹360

Q42. A jar has 4 red, 5 blue and 3 green marbles. One marble is picked without looking. What is the probability that it is not blue?

(A) 1/3 (B) 7/12 (C) 5/12 (D) 7/5

Q43. A closed dice-shaped carton has every edge sealed with one tape strip. How many tape strips are needed?

(A) 12 tape strips (B) 24 tape strips

(C) 6 tape strips (D) 8 tape strips

Q44. At a shop, rice costs ₹48/kg and dal costs ₹80/kg. Saira buys 2½ kg rice and 1.25 kg dal. What is her bill?

(A) ₹180 (B) ₹260 (C) ₹220 (D) ₹240

Q45. A cubical gift box is turned 90° around a vertical line through its centre. The top face looks the same. Which symmetry of the top view is shown?

(A) line symmetry (B) no symmetry

(C) plane symmetry (D) rotational symmetry

Achievers Section

5 questions · 3 marks each · 15 marks

Q46. The scores are 6, 8, 8, 10, 13. One more score is added so that the mean becomes 10. What is the new median?

(A) 10 (B) 15 (C) 9 (D) 8

Q47. A bag is bought for ₹800. It is marked 25% above cost and then sold after a 10% discount on marked price. What is the profit percent?

(A) 10% (B) 35% (C) 15% (D) 12.5%

Q48. What is the value of $(2^3 \times 2^4) \div 2^2 + 3^2$?

(A) 17 (B) 73 (C) 32 (D) 41

Q49. In triangle ABC, the exterior angle at C is 132°. If angle A is 18° more than angle B, what is angle A?

(A) 66° (B) 57° (C) 75° (D) 114°

Q50. The mean of five numbers is 12. Four of them are 8, 11, 13 and 17. What is the median of all five numbers?

(A) 12 (B) 11 (C) 13 (D) 10

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