INTERNATIONAL TALENT SEARCH EXAMINATION
2024 – 2025 PRACTICE PAPER

CLASS – VIII (MATHEMATICS)

Set – B

1. If $x < -\frac{37}{9}$, then x can be equal to

   (A) -1 (B) -2
   (C) -3 (D) none of these

2. Which of the following is correct?

   (A) $\frac{2}{3} > \frac{41}{60} > \frac{4}{5}$ (B) $\frac{2}{3} < \frac{4}{5} < \frac{41}{60}$
   (C) $\frac{2}{3} < \frac{41}{60} < \frac{4}{5}$ (D) $\frac{41}{60} < \frac{2}{3} < \frac{4}{5}$

3. The number of perfect squares upto 200 is

   (A) 12 (B) 13
   (C) 14 (D) 15

4. The square of 1001 is

   (A) 10101 (B) 1002001
   (C) 10200201 (D) None of these

5. If $x = a^{3/2}$; $y = \left(\sqrt{\frac{b}{a}}\right)^{-3}$; $z = \left(\sqrt{b}\right)^3$ and x.y.z = 8000, then a is equal to

   (A) 10 (B) 15
   (C) 20 (D) 25

6. If $\sqrt[3]{5} = 1.710$, then $\sqrt[3]{320}$ is

   (A) 5.829 (B) 6.829
   (C) 5.839 (D) 6.840

7. If $\frac{9x+7}{2} - \left(x - \frac{x-2}{7}\right) = 36$, then x is equal to

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

8. If $(3x - 8)(3x + 2) - (4x - 11)(2x + 1) = (x - 3)(x + 7)$, then x is equal to

   (A) 3 (B) 4
   (C) 5 (D) 6

9. Opposite angles of a parallelogram are $(2x - 10)°$ and $(3x - 70)°$. The value of x is

   (A) 40° (B) 50°
   (C) 60° (D) 90°

10. Diagonals of a rectangle ABCD meet at O. If AC = 14cm, BO is equal to

    (A) 6 cm (B) 7 cm

(C) 8 cm (D) 14 cm

11. The bisectors of two adjacent angle of a parallelogram intersect at
(A) 30° (B) 45°
(C) 60° (D) 90°

12. How many diagonals are there in a hexagon?
(A) 6 (B) 8
(C) 9 (D) 10

13. The number of times an observation occurs in a data is called its:
(A) range (B) frequency
(C) class size (D) none of these

14. The class marks of any interval are given by:
(A) $\frac{\text{Upper limit} + \text{Lower limit}}{2}$ (B) $\frac{\text{Upper limit} - \text{Lower limit}}{2}$
(C) $\frac{\text{Lower limit} \times \text{Upper limit}}{2}$ (D) $\frac{\text{Lower limit} - \text{Upper limit}}{2}$

15. The x-coordinate of every point on y-axis is
(A) zero (B) one
(C) two (D) none of these

16. The y-coordinate of every point on x-axis is
(A) one (B) two
(C) zero (D) none of these

17. If 2A = 3B and 4B = 5C, then A : C = ?
(A) 4 : 3 (B) 8 : 15
(C) 3 : 4 (D) 15 : 8

18. What least number must be subtracted from each number 23, 40, 57 and 108 so that remainders are in proportion?
(A) 6 (B) 9
(C) 3 (D) 5

19. The value of $(51)^3 + (49)^3$ is
(A) $5^6 2^4 - 300$ (B) $5^6 2^4 + 299$
(C) 250000 (D) $5^6 2^4 + 300$

20 . The value of p in $(x - 5)(x - 2) = x^2 + px + 10$ is
(A) -3 (B) -5
(C) -7 (D) -9

21. The factor of $125(2x + 3y)^3 - (2x - 3y)^3$ is:
(A) $(8x + 18y)(124x^2 + 189y^2 + 288xy)$ (B) $(8x + 18y)(115x^2 + 72y^2 + 125xy)$
(C) $(8x + 18y)(70x^2 + 79y^2 + 1250xy)$ (D) None of these

22. The factor of $1 - (b - c)^2$ is:
(A) $(1 + b + c)(1 + b - c)$ (B) $(1 - b + c)(1 + b + c)$
(C) $(1 - b + c)(1 + b - c)$ (D) none of these

23. If $\left(\frac{1}{x}\right)^{-\frac{3}{4}} = 8$ then x =

(A) 8 (B) 16
(C) 12 (D) 18

24 . The mixed radical $\sqrt[5]{486}$ can be expressed as

(A) $3\sqrt[5]{2}$ (B) $4\sqrt[5]{2}$
(C) $3\sqrt{2}$ (D) $4\sqrt{2}$

25. In a map, 0.8 cm can represents 8.8 km. How much distance will be represented by 80.5 cm on the map?

(A) 805 km (B) 885.5 km
(C) 664 km (D) none of these

26. If x + 5 : x + 9 = 2 : 3, then x = ?

(A) 2 (B) 3
(C) 4 (D) none of these

27. If the speed of water in the pipe is 30 cm/sec then the volume of water flowing out of a pipe having an area of cross section of 5 cm^2 in one minute, is equal to:

(A) 8 litres (B) 9 litres
(C) 7 litres (D) none of these

28. Area of a cuboid is 400 cm^2. If length and breadth are 10 cm and 5 cm, then its height is equal to:

(A) 5 cm (B) 10 cm
(C) 20 cm (D) none of these

29. The remainder when 83561379 is divided by 11, is

(A) 10 (B) 8
(C) 0 (D) none of these

30. In cryptarithm $\begin{array}{r} A \\ +\ A \\ +\ A \\ \hline BA \end{array}$, the value of A is

(A) 2 (B) 3
(C) 5 (D) 7

31. In a prism, side faces are

(A) square (B) rectangle
(C) parallelogram (D) triangle

32. In a right prism, the angle between the lateral edge and its base is

(A) 30° (B) 60°
(C) 90° (D) 0°

33. If $k = \frac{a+b}{a-b}$, where $a = \frac{2}{5}, b = \frac{1}{2}$, then k is equal to
(A) 9 (B) 10
(C) -9 (D) -10

34. The least number of 4 digits which is perfect square is
(A) 1000 (B) 1004
(C) 1024 (D) none of these

35. The value of $[(4^2 + 3^2)^{1/2}]^3$ is equal to
(A) 729 (B) 125
(C) 1331 (D) none of these

36. The solution of $\frac{1}{y+1} + \frac{1}{y+2} = \frac{2}{y+10}$ is
(A) $y = -\frac{26}{17}$ (B) $y = -\frac{25}{17}$
(C) $y = -\frac{25}{16}$ (D) none of these

37. Diagonals of a rhombus are 6cm and 8cm respectively. The side will be equal to
(A) 3 cm (B) 4 cm
(C) 5 cm (D) 6 cm

38. If each interior angle of a regular polygon is 135°. Then number of sides are
(A) 6 (B) 10
(C) 8 (D) 6

39. The probability that a card drawn from a pack of 52 cards will be a diamond is:
(A) $\frac{2}{13}$ (B) $\frac{1}{4}$
(C) $\frac{1}{13}$ (D) $\frac{1}{52}$

40. The point where the two axes intersect is called
(A) origin (B) co-ordinate
(C) intial point (D) none of these

41. At a certain party the ratio of boys to girls was 5 : 3 initially. If after 10 boys left, the ratio became 1 : 1, then how many people were there at party initially?
(A) 48 (B) 32
(C) 64 (D) 40

42. Product of (7x + y) and (x + 5y) is equal to
(A) $7x^2 - 36xy + 5y^2$
(B) $7x^2 - 36xy + 35y^2$
(C) $7x^2 + 36xy + 5y^2$
(D) none of these

43. The factor of $3x^2 + x^5$ is:
(A) $x(3 + x^3)$
(B) $x^2(3 + x^3)$
(C) $x^2(3 + x^2)$
(D) $x^3(3 + x^2)$

44. $\sqrt{2^x} = 32$ then $\frac{x-1}{x}$ is equal to
(A) 9
(B) 0.9
(C) 10
(D) $\frac{10}{9}$

45. Three taps A, B and C can fill a tank in 10 minutes, 15 minutes and 20 minutes respectively. If the tap were shut off after 5 minutes. What is the volume of water that over flowed (in %).
(A) 10%
(B) $11\frac{1}{9}\%$
(C) $8\frac{1}{3}\%$
(D) $9\frac{1}{11}\%$