INDEPENDENT SCHOOL DISTRICT

2021 PRACTICE TEST 05

MATHEMATICS

Time: 90 minutes

Number of Questions: 40

Directions: Read each question carefully. Choose the best answer.

1. If $3x + 7 = 22$, what is the value of x?

2. The area of a rectangle is 48 square cm. If the length is 12 cm, what is the width?

3. Which of the following is equivalent to $\frac{3}{4}$?

4. A train travels 240 km in 3 hours. What is its average speed?

5. What is the perimeter of a square with side length 9 cm?

6. If $y = 2x - 5$ and $x = 4$, what is y?

7. The ratio of boys to girls in a class is 3:5. If there are 24 boys, how many girls are there?

8. What is 15% of 200?

9. A triangle has angles of 60° and 80°. What is the third angle?

10. Which of the following is a prime number?

11. The mean of 5 numbers is 12. If four of the numbers are 10, 11, 13, and 14, what is the fifth number?

12. What is the value of 2^5?

13. A circle has a radius of 7 cm. What is its circumference? (Use $\pi = \frac{22}{7}$)

14. If $\frac{x}{5} = 8$, what is x?

15. Which of the following is the largest?

16. A bag contains 4 red, 3 blue, and 5 green marbles. What is the probability of drawing a blue marble?

17. What is the simplified form of $\frac{12}{18}$?

18. The sum of two numbers is 50 and their difference is 10. What are the numbers?

19. A cube has a volume of 64 cubic cm. What is the length of one edge?

20. If $3(x - 2) = 15$, what is x?

21. What is the median of the data set: 3, 7, 8, 12, 15?

22. A car uses 8 litres of petrol to travel 100 km. How much petrol does it use to travel 250 km?

23. What is the value of $\sqrt{144}$?

24. Which of the following is equivalent to 0.375?

25. A rectangle has a length of $(x + 3)$ and a width of $(x - 1)$. Which expression represents its area?

26. If $x : y = 2 : 3$ and $y = 12$, what is x?

27. What is the next term in the sequence: 2, 6, 18, 54, ...?

28. A shopkeeper buys an item for ₹400 and sells it for ₹500. What is the profit percentage?

29. The angles of a quadrilateral are x, $2x$, $3x$, and $4x$. What is x?

30. What is the value of $\log_{10} 1000$?

31. A pipe can fill a tank in 6 hours. Another pipe can fill it in 12 hours. How long will they take together?

32. If $f(x) = x^2 + 1$, what is $f(3)$?

33. What is the volume of a cylinder with radius 3 cm and height 10 cm? (Use $\pi = 3.14$)

34. The HCF of 36 and 48 is:

35. If $\sin\theta = \frac{3}{5}$, what is $\cos\theta$?

36. What is the value of $\frac{d}{dx}(x^3)$?

37. A sphere has a surface area of $4\pi r^2$. If $r = 5$ cm, what is the surface area?

38. The probability of an impossible event is:

39. What is the sum of the first 10 natural numbers?

40. If $A = \{1, 2, 3\}$ and $B = \{2, 3, 4\}$, what is $A \cap B$?

END OF TEST