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CBSE Sample Paper Class 9 Mathematics 2022-23

Subject: Mathematics Class: 9 Maximum Marks: 80 Duration: 3 hours

Instructions:

1. All questions are compulsory.
2. The question paper consists of 30 questions divided into four sections - A, B, C, and D.
3. Section A contains 6 questions of 1 mark each, Section B contains 6 questions of 2 marks each, Section C contains 10 questions of 3 marks each, and Section D contains 8 questions of 4 marks each.
4. Use of calculators is not permitted.

Section A: VSA (Very Short Answer) (1 mark each)

1. Find the value of 'x' in the equation: $2x - 5 = 15$.
2. If the digits of a two-digit number are interchanged, and the resulting number is 18 more than the original number. Find the original number.
3. What is the median of the following data set: 12, 18, 21, 25, 30?
4. If $(a + b) = 10$ and $(a - b) = 6$, find the value of 'a' and 'b.'
5. Solve for 'y' in the equation: $2y + 5 = 3y - 7$.
6. The perimeter of a rectangle is 30 cm, and its length is 8 cm. Find its width.

Section B: SA-I (Short Answer-I) (2 marks each)

7. If the radius of a circle is 7 cm, find its diameter and circumference.
8. Factorize the expression: $3x^2 - 6xy + 9xz - 18x$.
9. The area of a square field is 625 square meters. Find the length of one side of the square.



10. Solve the following pair of linear equations: $2x + 3y = 11$ $4x - 2y = 6$
11. If the ratio of the corresponding sides of two similar triangles is 3:5, and the perimeter of the smaller triangle is 24 cm, find the perimeter of the larger triangle.
12. Find the value of 'k' for which the following pair of linear equations has infinitely many solutions: $3x + 2y = 7$ $6x + 4y = k$

Section C: SA-II (Short Answer-II) (3 marks each)

13. A train travels 360 km at a constant speed. If the speed of the train is 90 km/hr, find the time taken to cover the distance.
14. A bag contains 5 red balls and 3 blue balls. If a ball is drawn at random, find the probability of getting a red ball.
15. Construct a quadrilateral ABCD, given that $AB = 6$ cm, $BC = 4$ cm, $CD = 5$ cm, and $AD = 7$ cm. Also, measure its diagonals AC and BD.
16. A cylindrical tank has a radius of 7 cm and height 10 cm. Find its curved surface area and total surface area.
17. The cost of 2 kg of rice is Rs. 80. Find the cost of 5 kg of rice.
18. If $a + b + c = 12$ and $ab + bc + ca = 30$, find the value of $a^2 + b^2 + c^2$.

Section D: LA (Long Answer) (4 marks each)

19. A chord of a circle of radius 10 cm subtends an angle of 60° at the center of the circle. Find the length of the chord.
20. The area of a triangle is 54 square cm. If the base is 9 cm, find its height.
21. A shopkeeper sells a pair of shoes for Rs. 1,800. If the cost price of the shoes is Rs. 1,200, find the profit percentage.
22. Find the value of 'k' for which the following system of equations has no solution: $x + y = 5$ $2x + ky = 10$



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23. The sum of the angles of a convex polygon is 1440° . Find the number of sides of the polygon.
24. The perimeter of a regular hexagon is 60 cm. Find the length of each side and the area of the hexagon.

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