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SAMPLE PAPER 10 : PERIODIC TEST – 1 (2019 – 20)
CLASS – IX
MATHEMATICS

T.T. 1:30 **M.M. 40**

General Instructions:

1. All questions are compulsory.
2. Question paper is divided into four sections: Section A contains 10 Objective type questions each carry 1 mark, Section B contains 3 questions each carry 2 marks, Section C contains 4 questions each carry 3 marks and Section D contains 3 questions each carry 4 marks.

SECTION – A (1 mark each)

1. The linear equation $2x - 5y = 7$ has
(a) A unique solution (b) Two solutions
(c) Infinitely many solutions (d) No solution

2. The point of the form (a, – a) always lies on the line
(a) $x = a$ (b) $y = -a$ (c) $y = x$ (d) $x + y = 0$

3. The equation $x = 7$, in two variables, can be written as
(a) $1 . x + 1 . y = 7$ (b) $1. x + 0. y = 7$
(c) $0 . x + 1 . y = 7$ (d) $0 . x + 0 . y = 7$

4. The point whose ordinate is 4 and which lies on y-axis is
(a) (4, 0) (b) (0, 4) (c) (1, 4) (d) (4, 2)

5. The points in which abscissa and ordinate have different signs will lie in
(a) I and II quadrants (b) II and III quadrants
(c) I and III quadrants (d) II and IV quadrants

6. The coefficient of x in the expansion of $(x + 3)^3$ is
(a) 1 (b) 9 (c) 18 (d) 27

7. The factorisation of $4x^2 + 8x + 3$ is
(a) $(x + 1)(x + 3)$ (b) $(2x + 1)(2x + 3)$
(c) $(2x + 2)(2x + 5)$ (d) $(2x - 1)(2x - 3)$

8. If $p(x) = x + 3$, then $p(x) + p(-x)$ is equal to
(a) 3 (b) 2x (c) 0 (d) 6

9. On rationalizing the denominator of $\frac{1}{3-2\sqrt{2}}$, we get
(a) $\frac{1}{3+2\sqrt{2}}$ (b) $3+2\sqrt{2}$ (c) $3-2\sqrt{2}$ (d) $-3-2\sqrt{2}$

10. The value of $16^{\frac{1}{2}}$ is :
(a) 8 (b) 4 (c) 16 (d) none of these

SECTION – B (2 marks each)

11. Find the value of k, if x = 2, y = 1 is a solution of the equation 3x + 2y = k.

12. Simplify: $(256)^{-(4)^{\frac{-3}{2}}}$

13. A point lies on the x-axis at a distance of 7 units from the y-axis. What are its coordinates? What will be the coordinates if it lies on y-axis at a distance of –7 units from x-axis?

SECTION – C(3 marks each)

14. If a = $5+2\sqrt{6}$ and a = $\frac{1}{a}$, then what will be the value of $a^2 + b^2$?

15. Find the value of a and b in $\frac{7+4\sqrt{3}}{5+2\sqrt{3}} = a - b\sqrt{3}$

16. Write the Euclid's Axiom 5. Why is Axiom 5, in the list of Euclid's axioms, considered a 'universal truth'?

17. Find p(0), p(1), p(–2) for the polynomial $p(x) = 10x - 4x^2 - 3$

SECTION – D (4 marks each)

18. Check whether p(x) is a multiple of g(x) or not :
(i) $p(x) = x^3 - 5x^2 + 4x - 3$, g(x) = x – 2
(ii) $p(x) = 2x^3 - 11x^2 - 4x + 5$, g(x) = 2x + 1

19. Plot the points A (1, – 1) and B (4, 5)
(i) Draw a line segment joining these points. Write the coordinates of a point on this line segment between the points A and B.
(ii) Extend this line segment and write the coordinates of a point on this line which lies outside the line segment AB.

20. Yamini and Fatima, two students of Class IX of a school, together contributed Rs 100 towards the Prime Minister's Relief Fund to help the earthquake victims. Write a linear equation which satisfies this data. Draw the graph of the same.