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SAMPLE PAPER 06 : 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. If x + 2 is a factor of $x^3 + 2ax^2 + ax - 1$ then the value of a is:

(a) $\frac{2}{3}$ (b) $\frac{3}{5}$ (c) $\frac{3}{2}$ (d) $\frac{1}{2}$

2. On dividing $x^3 + 3x^2 + 3x + 1$ by x we get remainder:

(a) 1 (b) 0 (c) – 1 (d) 2

3. The zero of p(x) = 9x + 4 is:

(a) $\frac{4}{9}$ (b) $\frac{9}{4}$ (c) $\frac{-4}{9}$ (d) $\frac{-9}{4}$

4. On rationalizing the denominator of $\frac{1}{2+\sqrt{3}}$, we get

(a) $2-\sqrt{3}$ (b) $\sqrt{3}-2$ (c) $2+\sqrt{3}$ (d) $-\sqrt{3}-2$

5. The value of $\left(\sqrt{5}+\sqrt{2}\right)^2$ is:

(a) $7+2\sqrt{5}$ (b) $1+5\sqrt{2}$ (c) $7+2\sqrt{10}$ (d) $7-2\sqrt{10}$

6. A linear equation in two variables has

(a) no solution (b) only one solution
(c) only two solutions (d) infinitely many solutions

7. The graph of the linear equation in two variables y = mx is

(a) a line parallel to x – axis (b) a line parallel to y – axis
(c) a line passing through the origin (d) not a straight line

8. On joining points (0, 0), (0, 2), (2,2) and (2, 0) we obtain a:

(a) Square (b) Rectangle (c) Rhombus (d) Parallelogram

9. The point of the form (a, a) always lies on:

(a) x – axis (b) y – axis (c) on the line y = x (d) on the x + y =0

10. Point (5, 0) lies on the:

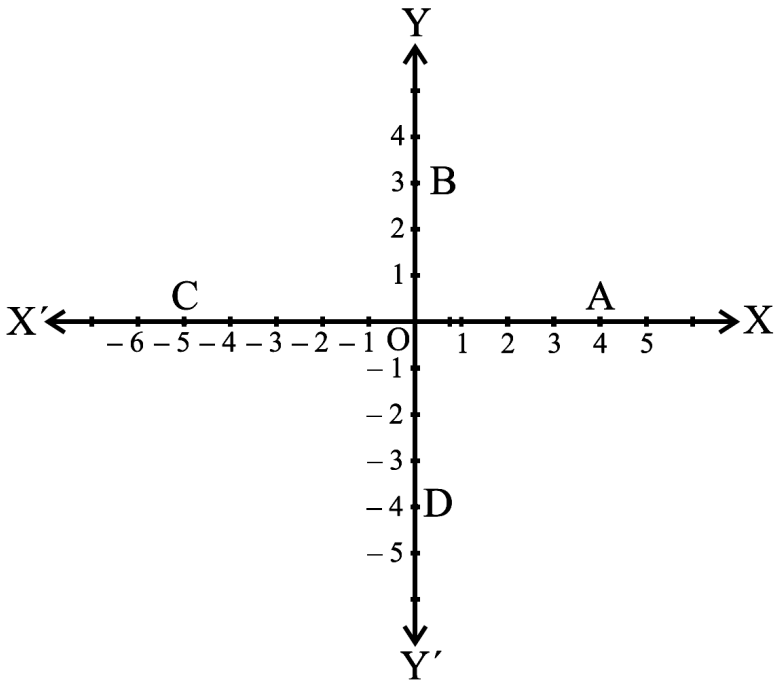
(a) I quadrant (b) II quadrant (c) x – axis (d) y – axis

SECTION – B (2 marks each)

11. Write four solutions for equation $2x + y = 7$.

12. Find (*i*) $125^{-\frac{1}{3}}$ (*ii*) $16^{\frac{3}{4}}$

13. Write the coordinates of the points A, B, C and D marked on the axes.



SECTION – C(3 marks each)

14. How would you rewrite Euclid's fifth postulate so that it would be easier to understand? Does Euclid's fifth postulate imply the existence of parallel lines? Explain.

15. Factorise : $27x^3 + y^3 + z^3 - 9xyz$

16. If $x = \frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}+\sqrt{2}}$ and $x = \frac{\sqrt{3}+\sqrt{2}}{\sqrt{3}-\sqrt{2}}$, then find $x^2 - y^2$.

17. Express 0.477777…… in the form $\frac{p}{q}$, where p and q are integers and $q \neq 0$.

SECTION – D (4 marks each)

18. In which quadrant or on which axis do each of the points (– 2, 4), (3, – 1), (– 1, 0), (1, 2) and (– 3, – 5) lie? Verify your answer by locating them on the Cartesian plane.

19. Solve the equation $2x + 1 = x - 3$, and represent the solution(s) on (i) the number line, (ii) the Cartesian plane.

20. Factorise: (i) $6x^2 + 5x - 6$ (ii) $3x^2 - x - 4$