KENDRIYA VIDYALAYA GACHIBOWLI, HYDERABAD SAMPLE PAPER 03 : 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 (2, 0) is a solution of the linear equation 2x + 3y = k, then the value of k is (a) 4 (b) 6 (c) 5 (d) 2**2.** Point (4, 1) lies on the line: (a) x + 2y = 5 (b) x + 2y = -6 (c) x + 2y = 6 (d) x + 2y = 163. Any solution of the linear equation 2x + 0y + 9 = 0 in two variables is of the form (a) $\left(-\frac{9}{2},m\right)$ (b) $\left(n,-\frac{9}{2}\right)$ (c) $\left(0,-\frac{9}{2}\right)$ (d) (-9, 0) 4. The signs of respective x-coordinate and y-coordinates of a point lying 2^{nd} quadrant are (d) + +(c) + -(a) - +(b) -, -5. The point (0, 4) lies on (a) I quadrant (b) negative x - axis (c) positive x - axis (d) y - axis6. If x + y + 2 = 0, then $x^3 + y^3 + 8$ equals (a) $(x + y + 2)^3$ (b) 0(c) 6xy (d) - 6xy7. If x = 2 is a zero of the polynomial $2x^2 + 3x - p$, then the value of p is (a) - 4(b) 0 (c) 8(d) 14 8. Factorisation of $x^3 + 1$ is (a) $(x + 1)(x^2 - x + 1)$ (c) $(x + 1)(x^2 - x - 1)$ (b) $(x + 1)(x^2 + x + 1)$ (d) $(x + 1)(x^2 + 1)$ 9. The rationalizing factor of $7-2\sqrt{3}$ is (c) $5+2\sqrt{3}$ (d) $4+2\sqrt{3}$ (a) $7 - 2\sqrt{3}$ (b) $7 + 2\sqrt{3}$ **10.** If $\frac{1}{7} = 0.\overline{142857}$, then $\frac{4}{7}$ equals (c) $0.\overline{857142}$ (d) $0.\overline{285718}$ (a) 0.428571 (b) 0.571428

SECTION – B (2 marks each)

11. Solve the equation 2y + 9 = 0, and represent the solution(s) on the Cartesian plane.

- **13.** Write the coordinates of the following points:
 - (i) lying on x-axis and with x-coordinate 4
 - (ii) lying on y-axis with y-coordinate -3.

SECTION – C(3 marks each)

14. Simplify the following expressions:

 $(i)2^{\frac{2}{3}}.2^{\frac{1}{3}}$ $(ii)11^{\frac{1}{4}} \div 11^{\frac{1}{2}}$ $(iii)8^{\frac{1}{2}}.7^{\frac{1}{2}}$

15. Write seven axioms of Euclid's Geometry.

16. Simplify $\frac{\sqrt{3} - \sqrt{2}}{\sqrt{3} + \sqrt{2}} + \frac{\sqrt{3} + \sqrt{2}}{\sqrt{3} - \sqrt{2}}$ by rationalizing the denominator.

17. Use the Factor Theorem to determine whether g(x) is a factor of p(x) in each of the following cases:
(i) p(x) = x³ - 4x² + x + 6, g(x) = x - 3
(ii) p(x) = x³ + 3x² + 3x + 1, g(x) = x + 2

SECTION – D (4 marks each)

- **18.** Three vertices of a rectangle are (4, 2), (-3, 2) and (-3, 7). Plot these points and find the coordinates of the fourth vertex.
- **19.** The taxi fare in a city is as follows: For the first kilometre, the fare is Rs 8 and for the subsequent distance it is Rs 5 per km. Taking the distance covered as x km and total fare as Rs y, write a linear equation for this information, and draw its graph.

20. If x + y = 12 and xy = 27, find the value of (i) $x^2 + y^2$ (ii) $x^3 + y^3$.

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