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SAMPLE PAPER 05 : 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. Simplify: $\left(\sqrt{13}+\sqrt{5}\right)\left(\sqrt{13}-\sqrt{5}\right)$

(a) $2\sqrt{5}$ (b) $2\sqrt{13}$ (c) 8 (d) 0

2. Find the value of $\left(\frac{64}{25}\right)^{-\frac{3}{2}}$

(a) $\frac{512}{125}$ (b) $\frac{125}{512}$ (c) 1 (d) none of these

3. Write the coefficients of x^2 in $9x^3 - 5x^2 + 4x - 6$

(a) –5 (b) 9 (c) 5 (d) 4

4. Find the zero of the polynomial p(x) = – 4x + 5.

(a) $\frac{4}{5}$ (b) –1 (c) 1 (d) $\frac{5}{4}$

5. In which quadrant, the points P(2, – 3) lie?

(a) I quadrant (b) II quadrant (c) III quadrant (d) IV quadrant

6. If a point lies on the y-axis, then what will be its abscissa?

(a) 1 (b) 0 (c) any value (d) none of these

7. Find the value of b, if x = 5, y = 0 is a solution of the equation 3x + 5y = b.

(a) –15 (b) 19 (c) 15 (d) 14

8. At what point the graph of the linear equation x + y = 5 cuts the x-axis?

(a) (5, 0) (b) (0, 5) (c) (0, – 5) (d) (– 5, 0)

9. How many solution(s) of the linear equation 2x + 3y = 18 has?

(a) one solution (b) two solutions
(c) infinitely many solutions (d) none of these

10. Find the remainder when $4x^3 - 3x^2 + 4x - 2$ is divided by x – 2.

(a) 26 (b) 3 (c) 15 (d) none of these

SECTION – B (2 marks each)

11. If the coordinates of two points are P(–2, 3) and Q(–3, 5), then find (abscissa of P) – (abscissa of Q).

12. Find the solution of the linear equation x + 2y = 8 which represents a point on the: (i) x-axis (ii) y-axis

13. Find the value of a and b, if $\frac{\sqrt{3}-1}{\sqrt{3}+1} = a + b\sqrt{3}$.

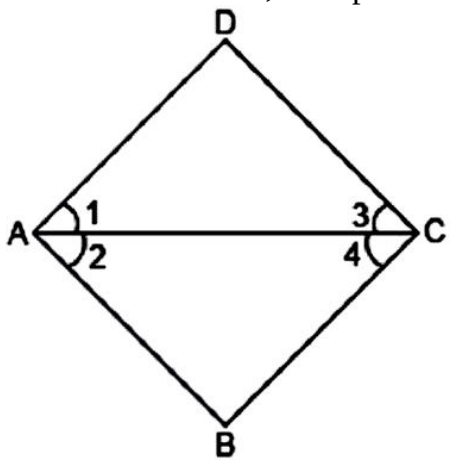
SECTION – C(3 marks each)

14. If x = 2 + $\sqrt{3}$, find the value of $x^3 + \frac{1}{x^3}$.

15. Simplify: $\left(\frac{x^a}{x^b}\right)^{a+b} \times \left(\frac{x^b}{x^c}\right)^{b+c} \times \left(\frac{x^c}{x^a}\right)^{c+a}$

16. If x + y + z = 6 and xy + yz + zx = 12, then show that: $x^3 + y^3 + z^3 = 3xyz$

17. In the given figure, if $\angle 2 = \angle 4$ and $\angle 4 = \angle 1$, then prove that $\angle 1 = \angle 2$.



SECTION – D (4 marks each)

18. Find the value of a and b so that x + 1 and x – 1 are factors of x4 + ax3 + 2x2 – 3x + b.

19. Plot the points A(0, 3), B(5, 3), C(4, 0) and D(– 1, 0) on the graph paper. Identify the figure ABCD and find whether the point E(2, 2) lies inside the figure or not?

20. Reshma, a student of class IX of a school, contributed 100 per month to an NGO to help the blind children. Taking total contribution as y for 6 months.
(i) Form a linear equation of the above information.
(ii) Draw it on the number time and also, on the Cartesian plane.