KENDRIYA VIDYALAYA GACHIBOWLI, HYDERABAD
SAMPLE PAPER 02 : 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 value of $25^{3/2}$ is :
(a) 5 (b) 25 (c) 125 (d) 625

2. $\frac{3\sqrt{12}}{6\sqrt{27}}$ equals
(a) $\frac{1}{2}$ (b) $\sqrt{2}$ (c) $\sqrt{3}$ (d) $\frac{1}{3}$

3. If $x^3 + 3x^2 + 3x + 1$ is divided by $(x + 1)$, then the remainder is
(a) –8 (b) 0 (c) 8 (d) $\frac{1}{8}$

4. If $2\left(a^2+b^2\right)=\left(a+b\right)^2$, then
(a) a + b = 0 (b) a = b (c) 2a = b (d) ab = 0

5. If a + b = –1, then the value of $a^3 + b^3 – 3ab$ is
(a) –1 (b) 1 (c) 26 (d) –26

6. The distance of the (4, –3) from x – axis is
(a) 3 units (b) –3 units (c) 4 units (d) 5 units

7. The coordinates of the point lying on the negative side of x-axis at a distance of 5 units from origin are
(a) (0, 5) (b) (0, –5) (c) (–5, 0) (d) (5, 0)

8. x = 5, y = 2 is a solution of the linear equation
(a) x + 2y = 7 (b) 5x + 2y = 7 (c) x + y = 7 (d) 5x + y = 7

9. Graph of y = 6 is a line:
(a) parallel to x – axis at a distance 6 units from the origin
(b) parallel to y – axis at a distance 6 units from the origin
(c) making an intercept 6 on the x –axis.
(d) making an intercept 6 on both the axes.

10. The equation of y –axis is of the form

(a) x = 0 (b) y = 0 (c) x + y = 0 (d) x = y

SECTION – B (2 marks each)

11. Show that 0.2353535……. can be expressed in the form of $\frac{p}{q}$, where p and q are integers and $q \neq 0$.

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

13. In which quadrant or on which axis do each of the points (5, 0), (–3, 5), (–3, –5) and (5, –3) in the Cartesian plane.

SECTION – C(3 marks each)

14. Simplify the following expressions: $(i) 2^{\frac{2}{3}}.2^{\frac{1}{3}}$ $(ii)\left(\frac{1}{3^5}\right)^4$ $(iii)\frac{7^{\frac{1}{5}}}{7^{\frac{1}{3}}}$

15. If a and b are rational numbers and $\frac{4-3\sqrt{5}}{4+3\sqrt{5}} = a + b\sqrt{5}$, find the values of a and b.

16. 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.

17. Factorise: $x^3 - 23x^2 + 142x - 120$

SECTION – D (4 marks each)

18. Points A (5, 3), B (– 2, 3) and D (5, – 4) are three vertices of a square ABCD. Plot these points on a graph paper and hence find the coordinates of the vertex C.

19. The polynomial $p(x) = x^4 - 2x^3 + 3x^2 - ax + 3a - 7$ when divided by $x + 1$ leaves the remainder 19. Find the values of a. Also find the remainder when $p(x)$ is divided by $x + 3$.

20. Solve the equation 2x + 11 = 0, and represent the solution(s) on (i) the number line,(ii) the Cartesian plane.