# KENDRIYA VIDYALAYA GACHIBOWLI, HYDERABAD <br> SAMPLE PAPER 03 : PERIODIC TEST - 1 (2019-20) <br> CLASS - IX <br> 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 $2 x+3 y=k$, then the value of $k$ is
(a) 4
(b) 6
(c) 5
(d) 2
2. Point $(4,1)$ lies on the line:
(a) $x+2 y=5$
(b) $x+2 y=-6$
(c) $x+2 y=6$
(d) $x+2 y=16$
3. Any solution of the linear equation $2 x+0 y+9=0$ in two variables is of the form
(a) $\left(-\frac{9}{2}, m\right)$
(b) $\left(\mathrm{n},-\frac{9}{2}\right)$
(c) $\left(0,-\frac{9}{2}\right)$
(d) $(-9,0)$
4. The signs of respective $x$-coordinate and $y$-coordinates of a point lying $2^{\text {nd }}$ quadrant are
(a),-+
(b),--
(c),+-
(d),++
5. The point $(0,4)$ lies on
(a) I quadrant
(b) negative x - axis
(c) positive x - axis
(d) $y-a x i s$
6. If $x+y+2=0$, then $x^{3}+y^{3}+8$ equals
(a) $(x+y+2)^{3}$
(b) 0
(c) $6 x y$
(d) $-6 x y$
7. If $x=2$ is a zero of the polynomial $2 x^{2}+3 x-p$, then the value of $p$ is
(a) -4
(b) 0
(c) 8
(d) 14
8. Factorisation of $x^{3}+1$ is
(a) $(x+1)\left(x^{2}-x+1\right)$
(b) $(x+1)\left(x^{2}+x+1\right)$
(c) $(x+1)\left(x^{2}-x-1\right)$
(d) $(x+1)\left(x^{2}+1\right)$
9. The rationalizing factor of $7-2 \sqrt{3}$ is
(a) $7-2 \sqrt{3}$
(b) $7+2 \sqrt{3}$
(c) $5+2 \sqrt{3}$
(d) $4+2 \sqrt{3}$
10. If $\frac{1}{7}=0 . \overline{142857}$, then $\frac{4}{7}$ equals
(a) $0 . \overline{428571}$
(b) $0 . \overline{571428}$
(c) $0 . \overline{857142}$
(d) $0 . \overline{285718}$

## SECTION - B (2 marks each)

11. Solve the equation $2 y+9=0$, and represent the solution(s) on the Cartesian plane.
12. Show that $0.47777777 \ldots \ldots$ can be expressed in the form of $\frac{p}{q}$, where p and q are integers and $q \neq 0$.
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) $2^{\frac{2}{3}} \cdot 2^{\frac{1}{3}} \quad$ (ii) $11^{\frac{1}{4}} \div 11^{\frac{1}{2}} \quad$ (iui) $) 8^{\frac{1}{2}} .7^{\frac{1}{2}}$
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) $p(x)=x^{3}-4 x^{2}+x+6, g(x)=x-3$
(ii) $p(x)=x^{3}+3 x^{2}+3 x+1, g(x)=x+2$

## 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 $x \mathrm{~km}$ and total fare as Rs $y$, write a linear equation for this information, and draw its graph.
20. If $x+y=12$ and $x y=27$, find the value of (i) $x^{2}+y^{2}$ (ii) $x^{3}+y^{3}$.
