

KENDRIYA VIDYALAYA GACHIBOWLI, HYDERABAD
SAMPLE PAPER 05 : PERIODIC TEST – 1 (2019 – 20)
CLASS – X
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 marks each)

1. Find the [HCF \times LCM] for the numbers 100 and 190.
(a) 100 (b) 190 (c) 19000 (d) none of these
2. Let $x = \frac{7}{20 \times 25}$ be a rational number. Then x has decimal expansion, which terminates:
(a) after four places of decimal (b) after three places of decimal
(c) after two places of decimal (d) after five places of decimal
3. The first term of an AP is 6 and the common difference is 5. What will be its 11th term?
(a) 56 (b) 41 (c) 46 (d) none of these
4. If the third term of an AP is 12 and the seventh term is 24, then the 10th term is
(a) 33 (b) 34 (c) 35 (d) 36
5. The value of k for which equation $9x^2 + 8xk + 8 = 0$ has equal roots is:
(a) only 3 (b) only -3 (c) ± 3 (d) 9
6. If 2 is the root of the equation $x^2 + bx + 12 = 0$ and the equation $x^2 + bx + q = 0$ has equal roots then q =
(a) 8 (b) 16 (c) -8 (d) -16
7. When lines l_1 and l_2 are coincident, then the graphical solution system of linear equation have
(a) infinite number of solutions (b) unique solution
(c) no solution (d) one solution
8. The solution of the equations $x + y = 14$ and $x - y = 4$ is
(a) $x = 9$ and $y = 5$ (b) $x = 5$ and $y = 9$ (c) $x = 7$ and $y = 7$ (d) $x = 10$ and $y = 4$
9. The quadratic polynomial, sum and product of whose zeroes are 1 and -12 respectively is
(a) $x^2 - x - 12$ (b) $x^2 + x - 12$ (c) $x^2 - 12x + 1$ (d) $x^2 - 12x - 1$.

10. If the product of two of the zeroes of the polynomial $2x^3 - 9x^2 + 13x - 6$ is 2, the third zero of the polynomial is:
- (a) -1 (b) -2 (c) $\frac{3}{2}$ (d) $-\frac{3}{2}$

SECTION – B(2 marks each)

11. Use Euclid's division algorithm to find the HCF of 504 and 980.
12. On dividing $x^3 + x^2 + x - 2$ by a polynomial $g(x)$, the quotient and remainder were $x^2 + 2x + 1$ and $2x - 1$ respectively. Find $g(x)$.
13. Find the sum of all the natural numbers less than 100 which are divisible by 6.

SECTION – C(3 marks each)

14. If m times the m th term of an AP is equal to n times its n th term, find the $(m + n)$ th term of the AP
15. Solve the following system of equations: $\frac{x}{a} + \frac{y}{b} = a + b$; $\frac{x}{a^2} + \frac{y}{b^2} = 2$
16. What will be the least possible number of the planks, if three pieces of timber 42 m, 49 m and 63 m long have to be divided into planks of the same length?
17. Find the positive value of k , for which the equation $x^2 + kx + 64 = 0$ and $x^2 - 8x + k = 0$ will both have real roots.

SECTION – D(4 marks each)

18. Find k so that $x^2 + 2x + k$ is a factor of $2x^4 + x^3 - 14x^2 + 5x + 6$. Also find all the zeroes of the two polynomials.
19. Two water taps together can fill a tank in 6 hours. The tap of larger diameter takes 9 hours less than the smaller one to fill the tank separately. Find the time in which each tap can separately fill the tank.
20. Solve for x and y : ($3x - y \neq 0, 3x + y \neq 0$)
- $$\frac{3}{3x - y} + \frac{2}{3x + y} = 2; \quad \frac{10}{3x - y} + \frac{2}{3x + y} = \frac{11}{2}$$