

KENDRIYA VIDYALAYA GACHIBOWLI, HYDERABAD
SAMPLE PAPER 03 : PERIODIC TEST – 1 (2019 – 20)
CLASS – X
MATHEMATICS

T.T. 1:30

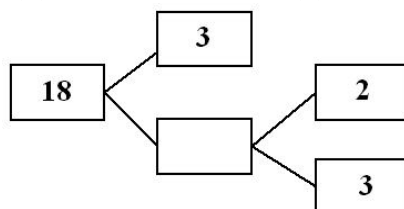
M.M. 40

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 mark each)

1. Which term of the AP 4, 9, 14, 19, is 109?
(a) 14th (b) 18th (c) 22nd (d) 16th
2. 7th term of an AP is 40. The sum of its first 13th terms is
(a) 500 (b) 510 (c) 520 (d) 530
3. If the equation $ax^2 + 2x + a = 0$ has two distinct roots if
(a) $a = \pm 1$ (b) $a = 0$ (c) $a = 0, 1$ (d) $a = -1, 0$
4. If the equation $ax^2 + bx + c = 0$ has equal roots then $c =$
(a) $\frac{-b}{2a}$ (b) $\frac{b}{2a}$ (c) $\frac{-b^2}{4a}$ (d) $\frac{b^2}{4a}$
5. The value of k for which the system of equations $x + 2y = 3$ and $5x + ky + 7 = 0$ has no solution is
(a) 10 (b) 6 (c) 3 (d) 1
6. The solution of the equations $x + 2y = 1.5$ and $2x + y = 1.5$ is
(a) $x = 1$ and $y = 1$ (b) $x = 1.5$ and $y = 1.5$
(c) $x = 0.5$ and $y = 0.5$ (d) none of these
7. A quadratic polynomial whose zeroes are $\frac{3}{5}$ and $-\frac{1}{2}$ is
(a) $10x^2 - x - 3$ (b) $10x^2 + x - 3$ (c) $10x^2 - x + 3$ (d) none of the above.
8. If α, β are the zeroes of the polynomials $f(x) = 4x^2 + 3x + 7$, then $\frac{1}{\alpha} + \frac{1}{\beta}$
(a) $\frac{7}{3}$ (b) $\frac{-7}{3}$ (c) $\frac{3}{7}$ (d) $\frac{-3}{7}$
9. The missing number in the following factor tree is
(a) 2 (b) 6 (c) 3 (d) 9



10. If two positive integers p and q can be expressed as $p = ab^2$ and $q = a^3b$; a, b being prime numbers, then LCM (p, q) is
(a) ab (b) a^2b^2 (c) a^3b^2 (d) a^3b^3

SECTION – B(2 marks each)

11. Divide $3x^2 - x^3 - 3x + 5$ by $x - 1 - x^2$.
12. Find the HCF of 96 and 404 by the prime factorisation method. Hence, find their LCM.
13. The sum of n terms of an AP is $(5n^2 - 3n)$. Find the AP and hence find its 10th term.

SECTION – C(3 marks each)

14. Solve: $px + qy = p - q$ and $qx - py = p + q$
15. Prove that $7 - 2\sqrt{3}$ is an irrational number.
16. Find the roots of the equation $\frac{1}{x+4} - \frac{1}{x-7} = \frac{11}{30}, x \neq -4, 7$.
17. 200 logs are stacked in the following manner: 20 logs in the bottom row, 19 in the next row, 18 in the row next to it and so on. In how many rows are the 200 logs placed and how many logs are in the top row?

SECTION – D(4 marks each)

18. A train covered a certain distance at a uniform speed. If the train would have been 10 km/h faster, it would have taken 2 hours less than the scheduled time. And, if the train were slower by 10 km/h; it would have taken 3 hours more than the scheduled time. Find the distance covered by the train.
19. Two water taps together can fill a tank in $9\frac{3}{8}$ hours. The tap of larger diameter takes 10 hours less than the smaller one to fill the tank separately. Find the time in which each tap can separately fill the tank.
20. If two zeroes of the polynomial $x^4 - 6x^3 - 26x^2 + 138x - 35$ are $2 \pm \sqrt{3}$, find other zeroes.
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