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SAMPLE PAPER 02 : 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. The HCF of two numbers is 23 and their LCM is 1449. If one of the numbers is 161, then the other number is
(a) 23 (b) 207 (c) 1449 (d) none of these
2. Euclid's division lemma state that for any positive integers a and b, there exist unique integers q and r such that $a = bq + r$ where r must satisfy
(a) $1 < r < b$ (b) $0 < r \leq b$ (c) $0 \leq r < b$ (d) $0 < r < b$
3. A quadratic polynomial whose zeroes are 1 and -3 is
(a) $x^2 - 2x - 3$ (b) $x^2 + 2x - 3$ (c) $x^2 - 2x + 3$ (d) none of the above.
4. If α, β are the zeroes of the polynomials $f(x) = x^2 + 5x + 8$, then $\alpha.\beta$
(a) 0 (b) 1 (c) -1 (d) none of these
5. The 4th term of an AP is 14 and its 12th term is 70. What is its first term?
(a) -10 (b) -7 (c) 7 (d) 10
6. Which term of the AP 4, 9, 14, 19, is 109?
(a) 14th (b) 18th (c) 22nd (d) 16th
7. The value of k for which $x = -2$ is a root of the quadratic equation $kx^2 + x - 6 = 0$
(a) -1 (b) -2 (c) 2 (d) $-\frac{3}{2}$
8. Which of the following is not a quadratic equation?
(a) $x - \frac{3}{x} = 4$ (b) $3x - \frac{5}{x} = x^2$ (c) $x + \frac{1}{x} = 3$ (d) $x^2 - 3 = 4x^2 - 4x$
9. The value of k for which the system of equations $kx - y = 2$ and $6x - 2y = 3$ has a unique solution is
(a) $k = -3$ (b) $k \neq -3$ (c) $k = 0$ (d) $k \neq 0$
10. If a pair of equation is inconsistent, then the lines will be
(a) parallel (b) always coincident
(c) always intersecting (d) intersecting or coincident

SECTION – B(2 marks each)

11. Find the zeroes of the quadratic polynomial $3x^2 - x - 4$.
12. Find the 10th term from the last term of the AP : 8, 10, 12, . . . , 126.
13. Find the HCF and LCM of 6, 72 and 120, using the prime factorisation method.

SECTION – C(3 marks each)

14. Solve for x and y: $7x - 15y = 2$ and $x + 2y = 3$
15. Prove that $\sqrt{2}$ is an irrational number.
16. If the sum of first 7 terms of AP is 49 and that of first 17 terms is 289, find the sum of first n terms.
17. Find the roots of the equation $2x^2 - 5x + 3 = 0$, by using quadratic formula.

SECTION – D(4 marks each)

18. Draw the graphs of the equations $5x - y = 5$ and $3x - y = 3$. Determine the co-ordinates of the vertices of the triangle formed by these lines and the y axis.
19. A train travels 360 km at a uniform speed. If the speed had been 5 km/h more, it would have taken 1 hour less for the same journey. Find the speed of the train.
20. Find all the zeroes of $2x^4 - 3x^3 - 3x^2 + 6x - 2$, if you know that two of its zeroes are $\sqrt{2}$ and $-\sqrt{2}$.

