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SAMPLE PAPER 04 : 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. The HCF of 52 and 130 is
(a) 52 (b) 130 (c) 26 (d) 13

2. The decimal expansion of $\frac{63}{72\times175}$ is
(a) terminating (b) non-terminating
(c) non termination and repeating (d) an irrational number

3. Which are the zeroes of $p(x) = x^2 + 3x – 10$:
(a) 5, –2 (b) –5, 2 (c) –5, –2 (d) none of these

4. A quadratic polynomial whose sum and product of zeroes are –5 and 6 is
(a) $x^2 – 5x – 6$ (b) $x^2 + 5x – 6$ (c) $x^2 + 5x + 6$ (d) none of the above.

5. If the pair of equations $2x + 3y = 7$ and $kx + \frac{9}{2}y = 12$ have no solution, then the value of k is:
(a) $\frac{2}{3}$ (b) – 3 (c) 3 (d) $\frac{3}{2}$

6. The pair of equations $3x + 4y = 18$ and $4x + \frac{16}{3}y = 24$ has
(a) infinite number of solutions (b) unique solution
(c) no solution (d) cannot say anything

7. Find the positive value of k for which the equations $x^2 + kx + 64 = 0$ and $x^2 – 8x + k = 0$ will have real roots.
(a) 8 (b) 16 (c) –8 (d) –16

8. The sum of a number and its reciprocal is $\frac{10}{3}$. Find the number.
(a) 3 (b) $\frac{1}{3}$ (c) both (a) and (c) (d) none of these

9. If a, a – 2 and 3a are in AP, then the value of a is
(a) –3 (b) –2 (c) 3 (d) 2

10. How many natural numbers between 1 and 1000 are divisible by 5?
(a) 197 (b) 198 (c) 199 (d) 200

SECTION – B(2 marks each)

11. Using Euclid's division algorithm, find whether the pair of numbers 847, 2160 are coprimes or not.

12. If the sum of the zeroes of the quadratic polynomial $ky^2 + 2y - 3k$ is equal to twice their product, find the value of k.

13. Find the sum of the first 25 terms of an AP whose nth term is given by $a_n = 7 - 3n$.

SECTION – C(3 marks each)

14. Prove that $\sqrt{7}$ is an irrational.

15. A number consists of two digits. Where the number is divided by the sum of its digits, the quotient is 7. If 27 is subtracted from the number, the digits interchange their places, find the number.

16. Solve the following equation for x: $\frac{1}{x+1}+\frac{2}{x+2}=\frac{5}{x+4}; x \neq -1,-2,-4$

17. Find the number of three-digit natural numbers which are divisible by 11.

SECTION – D(4 marks each)

18. In a class test, the sum of Shefali's marks in Mathematics and English is 30. Had she got 2 marks more in Mathematics and 3 marks less in English, the product of their marks would have been 210. Find her marks in the two subjects.

19. If the polynomial $x^4 - 6x^3 + 16x^2 - 25x + 10$ is divided by $(x^2 - 2x + k)$ the remainder comes out to be x + a, find k and a.

20. Solve the following system of linear equations graphically:

$3x + y - 12 = 0;$ $x - 3y + 6 = 0.$

Shade the region bounded by the lines and x-axis. Also, find the area of shaded region.