

**GRADE : X PERIODIC TEST -1 MARKS: 40**

**DATE : 02 .07.2023 MATHEMATICS TIME : 90MIN SECTION-A**

**I. ANSWER THE FOLLOWING: ( 5 X 1 = 5)**

1. Graph of a quadratic polynomial is a

(a) straight line (b) circle (c) parabola (d) ellipse

2. A quadratic polynomial whose one zero is 6 and sum of the zeros is 0, is

(a) x2– 6x + 2 (b) x2– 36 (c) x2– 6 (d) x2– 3

3. What is the number of solutions of the pair of linear equations 4p−6q+18=0

 and 2p−3q+9=0?

a) 0 b) 1 c) 2 d) Infinitely many

4. The value of K for which the system of equations x + Ky = 3 , 11x−77y = 87

 has a unique solution, is

a) K=13 b) K≠−7 c) K=87 d) K≠0

5. If the nth term of an A. P. is (2n + 1), then the sum of its first three terms is

a) 6n + 3 b) 15 c) 12 d) 21

**II. Answer the following: ( 5 x 2 = 10)**

6. Solve the following pair of linear equations for x and y : 4x-3y=8 ; 6x-y= $\frac{29}{3}$

 7. If α, β are the zeros of the polynomial 2y2 + 7y + 5, write the value of α + β + αβ.

8. If the nth term of the AP -1, 4, 9, 14 …is 129, find the value of n

9. Write a quadratic polynomial, a sum of whose zeros is 2√3 and their product is 2.

10. Find the missing numbers so that the numbers: , 7, , 23 …are in AP

**III. ANSWER THE FOLLOWING: ( 5 X 3 = 15)**

11. a) Solve the following pair of linear equations for x and y by substitution method :

 $\frac{x}{2}+\frac{2y}{3}=-1$ and x$-\frac{y}{3}$ = 3 **(or)**

 b) Solve: **2x + 3y = 11 and 2x – 4y = – 24 and hence find the value of ‘m’ for**

 **which y = mx + 3.**

12. Find the sum of the first 20 terms of an AP whose nth term is given as an=5-2n

13. **Compute the zeroes of the polynomial 4x2 – 4x – 8. Also, establish**

 **relationship between the zeroes and coefficients.**

14. a) If the sum of the first 7 terms of an AP is 119 and that of the first 17 terms is

 714, find the sum of its first n terms. **(or)**

 b) How many terms of the Arithmetic Progression 45, 39, 33,… must be taken

 so that their sum is 180? Explain the double answer.

15. Solve: 51x+23y=116 and 23x+51y=106. Find the value of x – y.

**IV. ANSWER THE FOLLOWING: (CASE STUDY) ( 2 x 5 = 10)**

16. Your friend Veer wants to participate in a 200m race. He can currently run that distance in 51 seconds and with each day of practice it takes him 2 seconds less. He wants to do in 31 seconds .



i) Which of the following terms are in AP for the given situation

a) 51,53,55…. b) 51, 49, 47…. c) -51, -53, -55…. d) 51, 55, 59…

ii) What is the minimum number of days he needs to practice till his goal is achieved?

a) 10 b) 12 c) 11 d) 9

iii) Which of the following term is not in the AP of the above given situation?

a) 41 b) 30 c) 37 d) 39

17. India is competitive manufacturing location due to the low cost of manpower and

 strong technical and engineering capabilities contributing to higher quality

 production runs. The production of TV sets in a factory increases uniformly by a

 fixed number every year. It produced 16000 sets in 6th year and 22600 in 9th year.

 Based on the above information , answer the following questions

1. Find the production during 8th year.
2. Find the production during first 3 years.
3. In which year, the production is 29200?

**ALL THE BEST**