Guru Aankian

Combined Paper	Std. X - Algebra Chapter 1 and 3	Marks : 20 Duration : 1 Hr.

Instruction :

Do not use calculator

All questions are compulsory

Do not change the order of sub-question.

Q.1 Attempt any four of the following : **[4 M]**

(1) If $t_n = n^2 + n$, then find two terms of an A.P. as t_2 and t_3

(2) Find the value of a, b, c in the following quadratic equation $x - 4x^2 + 5 = 0$

(3) Find the next two terms of the sequence 192, –96, 48, –24 .....

(4) State whether $(P - 4)\,P = 0$ is a quadratic equation or not.

(5) If $a = 2.5$ and $d = 1.5$, then find the first three terms of an A.P.

Q.2 Attempt any three of the following : **[6 M]**

(1) Find the eighteenth term of the A.P. 1, 7, 13, 19 .....

(2) Find three consecutive terms in A.P. whose sum is 27 and their product is 504.

(3) If one root of the quadratic equation $x^2 - 7x + k = 0$ is 4, then find the value of k.

(4) Determine the nature of the roots of the following equation from their discriminants. $2x^2 + 5\sqrt{3}x + 16 = 0$

Q.3 Attempt any Two of the following : **[6 M]**

(1) Solve the equation by completing the square $3y^2 + 7y + 1 = 0$

(2) A meeting hall has 20 seats in the first row, 24 seats in the second row, 28 seats in the third row, and so on. It has 30 rows in all. How many seats are there in the meeting hall?

(3) The length of the rectangle is greater than its breadth by 2 cms. The area of the rectangle is 24 sq.cms, find its length and breadth.

Q.4 Attempt any one of the following : **[4 M]**

(1) Solve the following equation

$$2\left(x^2 + \frac{1}{x^2}\right) - 9\left(x + \frac{1}{x}\right) + 14 = 0$$

(2) The 11^{th} term and the 21^{st} term of an A.P. are 16 and 29 respectively, then find

(a) The 1^{st} term and the common difference

(b) The 34^{th} term

(c) 'n' such that $t_n = 55$