Std.: 10 (English)   **Maths - I**   **Marks: 20**

Date: **Time: 1 hrs**

Chapter: 1 to 3

Q.1 **Choose the carrect alternatives.**   **(3)**

1) If in an A. P., d = 10, find $t_6 - t_2$.

a. 10   b. 50   c. 60   d. 40

2)

The quadratic equation $2x^2 - \sqrt{5}x + 1 = 0$ has

a. two distinct real roots

b. two equal real roots

c. no real roots

d. more than two real roots

3)

What is the degree of the determinant $\begin{vmatrix} a & b \\ c & d \end{vmatrix}$

a. 1   b. 3   c. 4   d. 2

Q.2 **Solve the following question. (Any Two)**   **(4)**

1) The first term and the common difference of an A. P. is 10,000 and 2000 respectively. Find the sum of first 12 terms of the A. P.

2) Find the values of the following determinants.

$A = \begin{vmatrix} 5 & 3 \\ 7 & 9 \end{vmatrix}$

3) Form a quadratic equation whose roots are 4 and -12.

Q.3 **Solve the following question. (Any Two)**   **(6)**

1) Solve the following simultaneous equations using Cramer's method.
3x - 4y = 10 ; 4x + 3y = 5

2) In an A.P. 17th term is 7 more than its 10th term. Find the common difference.

3) Solve the following quadratic equations by completing the square method.
$x^2 + 2x - 5 = 0$

Q.4 **Solve the following question. (Any One)**   **(4)**

1) In a flight of 3000 km, an aircraft was slowed down due to bad weather. Its average speed for the trip was reduced by 100 km/hr and consequently time of flight increased by one hour. Find the original duration of flight.

2) Solve the following simultaneous equations.

$$\frac{7x - 2y}{xy} = 5 \;\; ; \;\; \frac{8x + 7y}{xy} = 15$$

Q.5   **Solve the following question. (Any One)**   **(3)**

1) The sum of first n terms of an A.P. is $3n + n^2$ then (i) Find first term and sum of first two terms. (ii) Find second, third and 15th term.

2) Solve the following quadratic equations by completing square method: $x^2 + 3x - 4 = 0$