



Q.1. Solve the following:

(5x6=30)

i. if  $A = \begin{bmatrix} 1 & -1 \\ a & b \end{bmatrix}$  &  $A^2 = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$ , find the values of 'a' & 'b'

ii. Solve  $x^{\frac{2}{5}} + 8 = 6x^{\frac{1}{5}}$

iii. Find first fourth terms of A. P if  $3a_7 = 7a_4$  &  $a_{10} = 33$

iv. Find the multiplicative inverse of (-4, 7).

v. Show that  $\frac{\tan \theta + \sec \theta - 1}{\tan \theta - \sec \theta + 1} = \tan \theta + \sec \theta$

Q.2. Solve the following:

(3x10=30)

i. Use matrices to solve the system

$$x - 2y + z = 1$$

$$3x + y - 2z = 1$$

$$y - z = 1$$

ii. Solve  $(x-1)(x+5)(x+8)(x+2) - 880 = 0$

iii. For what value of n is  $\frac{a^n + b^n}{a^{n-1} + b^{n-1}}$ , The geometric mean b/x 'a' and 'b'