

(C) Find inverse of following matrix. (06)

$$A = \begin{bmatrix} 2 & 3 & 1 \\ 0 & 5 & 6 \\ 1 & 1 & 2 \end{bmatrix}$$

OR

Q.2 (A) Define (04)

(1) Unit matrix

(2) Transpose of a matrix

(3) Square matrix

(4) Row matrix

(B) If $AB = \begin{bmatrix} 5 & 6 \\ 1 & 2 \end{bmatrix}$ and $A = \begin{bmatrix} 2 & 3 \\ 4 & 1 \end{bmatrix}$ the find matrix B. (05)

(C) If $A = \begin{bmatrix} 3 & 5 \\ 1 & 2 \end{bmatrix}$, $B = \begin{bmatrix} 4 & 5 \\ 3 & 4 \end{bmatrix}$ then verify (06)

(1) $(AB)^T = B^T \cdot A^T$

(2) $(A+B)^T = A^T + B^T$

Q.3 (A) Evaluate the following. (09)

(1) $\lim_{x \rightarrow 2} \frac{x^2-4}{x^3-8}$

(2) $\lim_{x \rightarrow 0} \frac{1-\sqrt{1-x^2}}{x^2}$

(3) $\lim_{x \rightarrow \infty} \frac{x^2+5x+5}{3x^2-7x+8}$

(B) Find $\lim_{x \rightarrow 0} \frac{2^{3x}-2^x}{x}$ (06)

OR

Q.3 (A) Give rules of limit. (05)