

Find the minimal polynomial of matrix

$$A = \begin{bmatrix} 4 & -2 & 2 \\ 6 & -3 & 4 \\ -2 & 3 & 3 \end{bmatrix}$$

→ soln:- $\lambda^3 - (\text{trace of } A)\lambda^2 + (A_{11} + A_{22} + A_{33})\lambda - |A| = 0.$

$$\Rightarrow \lambda^3 - 4\lambda^2 + \dots$$

$$A_{11} = \begin{vmatrix} -3 & 4 \\ -2 & 3 \end{vmatrix} = -1$$

$$A_{22} = \begin{vmatrix} 4 & 2 \\ 3 & 3 \end{vmatrix} = 2$$