

## SNS COLLEGE OF ENGINEERING Kurumbapalayam (Po), Coimbatore - 641 107



## AN AUTONOMOUS INSTITUTION

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Topic: 1 - TUTORIAL II

## **Cayley-Hamilton theorem**

- 1. Using Cayley-Hamilton theorem find the inverse of  $A = \begin{pmatrix} 1 & 3 & 7 \\ 4 & 2 & 3 \\ 1 & 2 & 1 \end{pmatrix}$
- 2. Verify Cayley-Hamilton theorem for the matrix  $A = \begin{pmatrix} 2 & 0 & -1 \\ 0 & 2 & 0 \\ -1 & 0 & 2 \end{pmatrix}$  and hence find  $A^{-1}$ and A<sup>4</sup>

- $A^{8}-5A^{7}+7A^{6}-3A^{5}+A^{4}-5A^{3}+8A^{2}-2A+I, \text{ if the matrix } A = \begin{pmatrix} 2 & 1 & 1 \\ 0 & 1 & 0 \\ 1 & 1 & 2 \end{pmatrix}.$ 5. Verify Cayley-Hamilton theorem for the matrix  $A = \begin{pmatrix} 1 & 0 & 3 \\ 2 & 1 & -1 \\ 1 & -1 & 1 \end{pmatrix}$ , find its  $A^{-1}$ .