#### SNS COLLEGE OF TECHNOLOGY (An Autonomous Institution)





## COIMBATORE-35 UNIT -3 / SOLUTION OF EQUATION AND EIGEN VALUE PROBLEMS DEPARTMENT OF MATHEMATICS

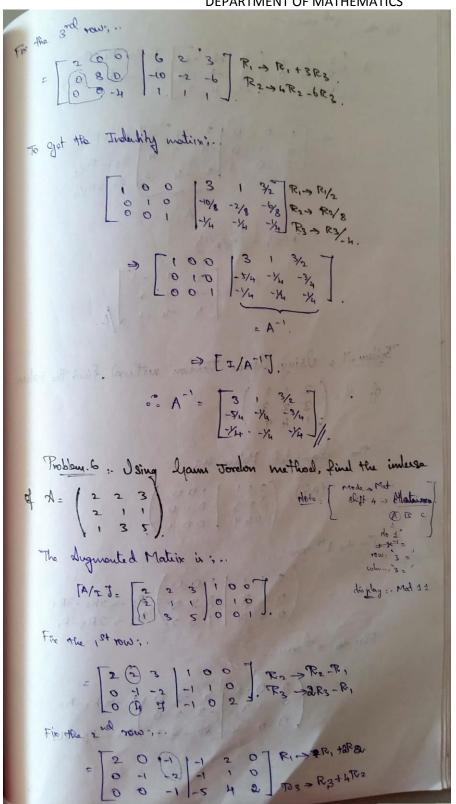
Robbern. S. Rulerse of a Matin by Gours Jordon Kethol wing Gam Forden method, find the inderse of the.  $A_{\pm} \begin{pmatrix} 1 & 1 & 3 \\ 1 & 3 & -3 \\ -2 & -4 & -44 \end{pmatrix},$ The augmented Matin is;  $[A/T] = \begin{bmatrix} 1 & 1 & 3 & | & 1 & 0 & 0 \\ 0 & 3 & -3 & | & 0 & 1 & 0 \\ -2 & -1 & -1 & 0 & 0 & 1 \end{bmatrix}$ Fix the 1st Yow; ....  $= \begin{bmatrix} 1 & (1) & 3 & | & 1 & 0 & 0 \\ 0 & 2 & -6 & | & -1 & 1 & 0 \\ 0 & (-2) + 2 & 2 & 0 & 1 & 0 \\ \end{bmatrix} \begin{bmatrix} R_2 \rightarrow R_2 - R_1 \\ R_3 \rightarrow R_3 + 2R_1 \\ R_3 \rightarrow R_3 + 2R_1 \end{bmatrix}$ Fire the 2nd row ...  $= \begin{bmatrix} 2 & 0 & (12) \\ 0 & 2 & -6 \\ 0 & 0 & -4 \\ 0 & 0 & -4 \\ \end{bmatrix} \begin{bmatrix} 3 & -1 & 0 \\ -1 & 0$ 

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Inverse of matrix using Gauss Jordon method

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Fix the 3<sup>md</sup> nows: =  $\begin{pmatrix} 4 & 0 & 0 \\ 0 & H & 0 \\ 0 & 0 & -H & 20 & -14 & 2 \end{pmatrix}$   $R_1 \rightarrow 2R_1 - R_3$ . Re  $\rightarrow 4R_2 - 3R_3$ .  $A^{-3} \begin{pmatrix} -3 & \sqrt{2} & \sqrt{2} \\ -3/1 & \sqrt{2} & \sqrt{2} \\ -3/1 & \sqrt{2} & \sqrt{2} \end{pmatrix}$