5+5+4+5+5 = 24

Course B.Tech First Semester Examination, 20 22 - 20 23

Class Test No. 1 Date 12/12/22

Name Srayashi Saha

University Roll No.: 12000222031 (~~2201035~~) Branch Information Technology

COLLEGE ROLL NO - 2201035

Paper Name Mathematics I-A Paper Code BSM101

Signature of Invigilator

Group A

1(a) Let $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$

$|A| = 4 - 6 = -2$.

Cofactor of $A = \begin{bmatrix} 4 & -3 \\ -2 & +1 \end{bmatrix}$

Transpose of co-factor $= \begin{bmatrix} 4 & -2 \\ -3 & 1 \end{bmatrix}$

Inverse of A = $\frac{\text{Transpose of co-factor}}{\text{det of } |A|}$ = $\frac{\text{Adjoint of } A}{\text{det of } |A|}$

(i) $-1/2 \begin{bmatrix} 4 & -2 \\ -3 & 1 \end{bmatrix}$ [Ans].

(b) $\begin{bmatrix} 0 & 1 & -2 \\ -1 & 0 & 3 \\ \lambda & -3 & 0 \end{bmatrix}$

det of Matrix $= 0(0+9) - 1(-1-3\lambda) + (-2)(3-0)$

$\Rightarrow 3\lambda = 6$

$\Rightarrow \lambda = 2$.

$\therefore$ iv = 2 Ans.