Model Question paper for online examination

S.Y.B.Sc.CS Maths-II

1) Rank of the matrix is

(a) 2 (b) 3 (c) 4 (d) 5

2) The dimension of the subspace of $M_{2\times 2}$ spanned by $\begin{pmatrix} 1 & -5 \\ -4 & 2 \end{pmatrix}$, $\begin{pmatrix} 1 & 1 \\ -1 & 5 \end{pmatrix}$ and $\begin{pmatrix} 2 & -4 \\ -5 & 7 \end{pmatrix}$ is

(a) 1 (b) 2 (c) 3 (d) 4

3) U and V are subspace of R^4 such that

U = span [(1,2,3,4), (5,7,2,1), (3,1,4,-3)]

V=span [(2,1,2,3), (3,0,1,2), (1,1,5,3)].

Then the dimension of $U \cap V$ is

(a) 1 (b) 2 (c) 3 (d) 4

4) $A = \begin{pmatrix} 0 & 1 & a \\ 0 & 0 & 1 \\ 0 & 0 & 0 \end{pmatrix}$ and $B = \begin{pmatrix} 0 & 1 & 0 \\ 0 & 0 & 1 \\ 0 & 0 & 0 \end{pmatrix}$. Then

(a) A and B are similar (b) A and B are not similar

(c) A and B are nilpotent (d) A and AB are similar

5) Let $S = 2 - x + 3x^2, x + x^2, 1 - 2x^2$ be subset of $P_2(R)$. Then

(a) S is linearly independent (b) S is linearly dependent

(c) (2,-1,3), (0,1,1), (1,0,-2) are linearly dependent (d) S is a basis of $P_2(R)$