

Roll No.

Total No. of Pages : 02

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B.Sc. (IT)/ Graphics & Web Designing / BCA (Sem-1)

MATHEMATICS

Subject Code : UGCA1901

M.Code : 76961

Date of Examination : 20-12-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **SIX** questions carrying **TEN** marks each and students have to attempt any **FOUR** questions.

SECTION-A

- 1. Attempt the following :**

- Define Disjoint Set
- If $A = \{1, 2\}$ & $B = \{2, 5\}$, find $A \cup B$.
- Define Power set.
- Write the negative statement of "Sun rises from east."
- Write the truth table for Conjunction.
- Define Square Matrix.
- If $X = \begin{bmatrix} 2 & 3 \\ -1 & 4 \end{bmatrix}$ & $Y = \begin{bmatrix} 1 & 0 \\ -2 & 3 \end{bmatrix}$, then find $X + Y$.
- If $A = \begin{bmatrix} -1 & 2 \\ -3 & 4 \end{bmatrix}$, Find the transpose of A .
- Find the fourth term in the sequence 4, 9, 14, Of A
- Define Geometric mean.

SECTION - B

2. If $U = \{1,2,3,4,5,6,7,8,9\}$, $X = \{1,2,7,8\}$ & $Y = \{2,5,8,9\}$. Find $X \cap Y$, $X - Y$, $Y - X$, X' .
3. Prove that : $p \wedge (q \vee r) = (p \vee q) \vee (p \wedge r)$.
4. If $X = \begin{bmatrix} 5 & 2 & -3 \\ 1 & 0 & 6 \\ -5 & 1 & 7 \end{bmatrix}$, $Y = \begin{bmatrix} 3 & -2 & 6 \\ 2 & 7 & -1 \\ 5 & 4 & 0 \end{bmatrix}$, then find XY .
5. If $A = \begin{bmatrix} 4 & 2 & -3 \\ 1 & 3 & -6 \\ -5 & 0 & -7 \end{bmatrix}$, $B = \begin{bmatrix} 0 & -2 & -1 \\ 1 & 3 & 0 \\ -5 & 0 & -7 \end{bmatrix}$, then find $4A - 3B$.
6. The 7th term of an A.P. is 20 and its 13th term is 32. Find the A.P.
7. The 3rd and 8th term of a G.P. are 4 and 128 resp. Find the G.P.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.