AJEENKYA
D Y PATIL UNIVERSITY

Summer Term Examinations (July 2019)

School: School of Engineering **Program: BCA (MACT/CTIS/DS)**

Course: Elementary Mathematics **Course Code: GLO115**

Semester: Summer Term **Max Marks: 50** **Duration (mins): 90 mins**

Section A

Q1 Fill in the Blanks. (Any Five) **10 Marks**

1) The matrix in which number of rows and number of column are same called as ……
2) The derivative of x^n = …….
3) A collection of well-defined object called as……..
4) The compliment of set A denoted by ……..
5) If A and B are two different sets then $A \cup B$ = ……..
6) Product rule for derivative is of the form ……
7) A matrix is said to be symmetric if …….

Section B

Q2. Answer the following (Any Four) **20 Marks**

1) Write domain and codomain of $\{(\mathbf{1},\mathbf{1})(\mathbf{2},\mathbf{4}),(\mathbf{3},\mathbf{9}),(\mathbf{4},\mathbf{16}),(\mathbf{5},\mathbf{25})\}$
2) For $\begin{bmatrix} -\mathbf{1} & \mathbf{2} \\ -\mathbf{2} & \mathbf{3} \end{bmatrix}$ Find Minor of $\boldsymbol{a_{22}}$
3) If A = $\begin{bmatrix} 1 & 3 & 2 \\ 2 & 4 & -1 \\ -1 & -2 & 0 \end{bmatrix}$ what is the position of element 2, -1, 0, 4
4) Represent following Relation in to Venn diagram .Write Domain , co-domain, Range :
   a) $\{(\mathbf{1},-\mathbf{2}),(\mathbf{3},\mathbf{7}),(\mathbf{4},-\mathbf{6}),(\mathbf{8},\mathbf{1})$
   b) $\{(\boldsymbol{a},\boldsymbol{b}),(\boldsymbol{b},\boldsymbol{c}),(\boldsymbol{c},\boldsymbol{b}),(\boldsymbol{d},\boldsymbol{c})\}$

5) Define term Upper triangular matrix with Example

6) Find the co- factor element a_{21} , a_{12} , a_{33} , a_{13} in matrix A = $\begin{bmatrix} 1 & 2 & 3 \\ 0 & -3 & -1 \\ 2 & -1 & 1 \end{bmatrix}$

Section C

Q3. Answer the following (Any Two) **20 Marks**

1) If $\boldsymbol{U} = \{\, \mathbf{1}, \mathbf{2}, \mathbf{3}, \mathbf{4}, \mathbf{5}, \mathbf{6}, \mathbf{7}, \mathbf{8}, \mathbf{9}, \mathbf{10}, \mathbf{11}, \mathbf{12} \,\}$ $\boldsymbol{A} = \{\, \mathbf{2}, \mathbf{4}, \mathbf{6}, \mathbf{7}, \mathbf{8}, \mathbf{10} \,\}$

And $\boldsymbol{B} = \{\, \mathbf{1}, \mathbf{4}, \mathbf{5}, \mathbf{7}, \mathbf{9}, \mathbf{10}, \mathbf{12} \,\}$

Find, **1**) $(\boldsymbol{A} \cup \boldsymbol{B})$ **2**) $(\boldsymbol{A} \cap \boldsymbol{B})$ **3**) $(\boldsymbol{A}' \cup \boldsymbol{B}')$ **4**) $(\boldsymbol{A}' \cap \boldsymbol{B}')$ **5**) $\boldsymbol{n}(\boldsymbol{A})$

2) Write any Five Types of Matrix with Example.

3) $If\ A = \begin{bmatrix} 1 & 2 & 1 \\ 3 & 0 & 4 \\ 2 & 1 & 3 \end{bmatrix}$ $and\ B = \begin{bmatrix} -1 & 2 & 3 \\ 3 & -2 & 0 \\ 2 & 1 & -3 \end{bmatrix}$ $Find\ a)\ 3A + 2B$ $b)\ 2A - 2B$

4) Write the note on Union set, Intersection Set, Difference set, Complement set.

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