Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐☐   Total No. of Pages : 02

Total No. of Questions : 07

BCA   (Sem.–1)
MATHEMATICS (BRIDGE COURSE)
Subject Code : BC-102
M.Code : 10002

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. **Write briefly :**

    a) Define Empty Set.

    b) Define Power set.

    c) Define Square matrix.

    d) Find the determinant of $\begin{vmatrix} 3 & 0 \\ 1 & 2 \end{vmatrix}$.

    e) If $A = \{1,3,7,8\}$; $B = \{2,4,6,8,\}$, then find $A \cup B$ and $A \cap B$.

    f) Define Statistics.

    g) If $A = \begin{bmatrix} 2 & -1 \\ 0 & 1 \end{bmatrix}$, $B = \begin{bmatrix} 3 & 1 \\ 1 & -3 \end{bmatrix}$, Find AB.

    h) Define mean.

    i) Explain tabulation of data.

    j) Define Mode.

SECTION-B

2. How many positive integers less than or equal to 60 are not divisible by 3, 4 or 5?

3. Use Mathematical induction to show that $1.2 + 2.3 + \ldots \ldots + n(n+1) = \dfrac{n(n+1)(n+2)}{3}$.

4. Let n be a positive integer. Then for all x and y prove that $(x + y)^n = x^n + C(n, 1)xn^{-1}y + \ldots \ldots \ldots + y^n$.

5. Solve : $5x + 3y + 7z = 4$; $3x + 26y + 2z = 9$; $7x + 2y + 10z = 5$.

6. Define secondary data. What the sources for the collection of secondary data. What precautions should be taken while using the secondary data?

7. From the following data, obtain the mean and median equations :

X	1	2	3	4	5	6	7	8	9

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.