UDHNA CITIZEN COMMERCE COLLEGE &
SPB COLLEGE OF BUSINESS ADMINISTRATION &
SMT. DIWALIBEN HARJIBHAI GONDALIYA COLLAGE OF BCA & IT

CLASS: F.Y.B.SC.I.T. (Semester - 1)
SUBJECT: Mathematics(102)
Academic Year:2025-26

HOME ASSIGNMENT

Assignment : 1

Q-1 Define the following terms: (i) onto function (ii) one-one function (iii) composition of two function (iv) Symmetric matrix (v) Skew-Symmetric matrix

Q-2 Let P(A) be the power set of A. let $\subseteq$ (inclusion) be a relation on P(A). Show that it is reflexive and anti-symmetric.

Q-3 Let $f : R \longrightarrow R$ be a function defined as $f(x) = 3x + 5$. Prove that f is one-one and onto and hence find the inverse of f.

Q-4 Find the inverse of the following matrix A using elementary row transformation.

$$A = \begin{bmatrix} 2 & -3 & 3 \\ 2 & 2 & 3 \\ 3 & -2 & 2 \end{bmatrix}$$

Q-5 If A and B are invertible matrices of the same order, then prove that

$$(AB)^{-1} = B^{-1} A^{-1}$$

Assignment: 2

Q-1 Find mean, median and mode from the following data :

Class	20-25	25-30	30-35	35-40	40-45	45-50
Frequency	5	12	15	8	5	5

Q-2 Find Q_1, D_7 and P_{90} from the following data :

Class	0-10	10-20	20-30	30-40	40-50	50-60
Frequency	4	6	20	10	7	3

Q-3 Define: (i) Range (ii) Mean Deviation (iii) Standard deviation (iv) Sample Space (v) Mutually Exhaustive Events (vi) Conditional Probability

Q-4 A uniform die is thrown, consider
Event A: Number on the die is less than 4
Event B: Number on the die is even then find
i) $P(A)$, *ii)* $P(B)$, *iii)* $P(B')$, *iv)* $P(A \cap B)$, *v)* $P(A \cap B')$, vi) $P(A \cup B)$, *vii)* $P(A' \cap B')$

Q-5 State the Probability function of Poisson distribution and obtain its mean.

Notes :

- Assignment must be self-handwritten with blue ink ball point pen only.
- Student must upload assignment using Udhna College Application.
- Assignment submission date will be declared later on.

31/07/25