

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

CLASS: F.Y.B.C.A. (Semester - 1)

SUBJECT: Mathematics(102)

Academic Year:2025-26

HOME ASSIGNMENT

Assignment : 1

- Q-1 State and prove De Morgan's law for Union . Also verify it by Venn-Diagram.
- Q-2 The fixed cost in the production of transistors is Rs 1,50,000 and the variable cost per unit is Rs. 1500. If the selling price of a transistor is Rs.2500 then find : (1) Cost function (2) Revenue Function (3) Break even point.
- Q-3 Prove the following Distributive laws by using truth table :
- (i) $p \wedge (q \vee r) = (p \wedge q) \vee (p \wedge r)$
- (ii) $p \vee (q \wedge r) = (p \vee q) \wedge (p \vee r)$

Assignment: 2

- Q-1 Show that D_9 is not a Boolean Algebra where
- $D_9 = \{ \text{division of } 9 \}$ and for all $x, y \in D_9$
- $x + y = \text{L.C.M. of } x \text{ \& } y$
- $x * y = \text{G.C.D. of } x \text{ \& } y$ and $x' = 9 / x$
- Q-2 Solve the equations by Cramer's rule :
- $x + 2y + 3z = 14$, $2x + y + z = 7$, $5x + 2y + z = 12$
- Q-3 Find the inverse of the following matrix and verify that

$$AA^{-1} = I : \begin{bmatrix} 2 & 1 & -1 \\ 1 & 0 & -1 \\ 1 & 1 & 2 \end{bmatrix}$$

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.

A. Rajan
15/07/25