

**UDHNA CITIZEN COMMERCE COLLEGE &
SPB COLLEGE OF BUSINESS ADMINISTRATION &
SMT. DIWALIBEN HARIBHAI GONDALIYA COLLEGE 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 the Distributive Law of Union over Intersection.

Q-2 The fixed cost in the production of monitors is Rs. 4,00,000 and the variable cost per unit is Rs. 2,000. If the selling price is Rs. 3,000, then find: (1) Cost Function (2) Revenue Function (3) Break-even Point.

Q-3 Prove the following Associative Laws:

(i) $(p \vee q) \vee r = p \vee (q \vee r)$

(ii) $(p \wedge q) \wedge r = p \wedge (q \wedge r)$

Assignment : 2

Q-1 Show that D_8 is not a Boolean Algebra, where $D_8 = \{\text{divisors of } 8\}$, for all $a, b \in D_8$,

$a + b = \text{L.C.M. of } a \text{ and } b$

$a \cdot b = \text{G.C.D. of } a \text{ and } b$

$a' = 8/a$

Q-2 Solve the following equations by Cramer's Rule:

$$\frac{3}{x} - \frac{4}{y} + \frac{2}{z} = 1$$

$$\frac{1}{x} + \frac{2}{y} + \frac{1}{z} = 2$$

$$\frac{2}{x} + \frac{5}{y} - \frac{2}{z} = 3$$

Q-3 Show that $A = \begin{bmatrix} 2 & -1 & 1 \\ -1 & 2 & -1 \\ 1 & -1 & 2 \end{bmatrix}$ satisfies the equation $A^3 - 6A^2 + 9A - 4I = 0$.

Hence deduce A^{-1} .

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2/10/25
17/8

A.H. Chauhan
17/8