



- Notes : 1. All questions are compulsory.
2. Each question carries equal marks.

1. What is truth functional statement? Explain the various types of truth functional statements.

OR

Write a note on – Symbolizing statements.

2. What are the advantages of shorter truth table method? Explain the basic principles of shorter truth table method.

OR

Use truth tables to determine the validity or invalidity of the following argument.

a) $(R \vee S) \supset T$
 $T \supset (R \cdot S) / \therefore (R \cdot S) \supset (R \vee S)$

b) $U \supset (V \vee W)$
 $(V \cdot W) \supset \sim U / \therefore \sim U$

3. What are the different types of deductive proof? Explain with illustration the method of direct deductive proof.

OR

Construct a formal proof of validity-

a) $(R \vee S) \supset (T \cdot U)$
 $\sim R \supset (V \supset \sim V)$
 $\sim T / \therefore \sim V$

b) $(M \supset N) \cdot (O \supset P)$
 $\sim N \vee \sim P$
 $\sim (M \cdot O) \supset Q / \therefore Q$

4. Prove the invalidity of the following:

a) $(x) (Gx \supset Hx)$
 $(x) (Gx \supset Ix) / \therefore (x) (Ix \supset Hx)$

b) $(\exists x) (Mx \cdot Nx)$
 $(\exists x) (Mx \cdot Ox) / \therefore (x) (Ox \supset Nx)$

OR

Write a note on – Symbolization of general proposition.

5. What is definition? Discuss the various types of definition.

OR

Write short note on-

- a) Three laws of thoughts
b) Inconsistency
