

ATOMIC ENERGY CENTRAL SCHOOL , ANUPURAM

TOPIC : COMPUTER ORGANISATION

SUB TOPIC: BOOLEAN ALGEBRA

WORKSHEET 5 (Module 5)

Sub: Computer Science

Class : XI

1. $X.(X+Y)=X$ represents ____ law of Boolean relation.
2. A dot (.) is used to show the ____ operation.
3. Output is 1 only when both the inputs are 1 otherwise result is 0 using ____ gate.
4. Dual of $0 + 0 = 0$ is ____.
5. An input that is AND'ed or OR'ed with itself equals same input represents ____ law.
6. State and verify Associative law using Truth Table.
7. State and algebraically verify Absorption law
8. Verify the following using truth table:
 - (i) $X . X = X$
 - (ii) $X + X' = 1$
9. State the distributive laws of boolean algebra.
10. Verify the following boolean expression using truth table:
 - (i) $X . X' = 0$
 - (ii) $X + 1 = 1$
11. State and verify absorption law using truth table.
12. Prove the following by truth table:
$$xy + x'y' + xz$$
$$(a + b)(a' + b')$$
13. State and verify Associative law .
14. Write basic postulates of logical addition(OR operation).
15. Define principle of duality and Give the dual of the following boolean function.
$$X'.(Y +Z') + X' . (Y + Z)$$
