

## Boolean Algebra

Simplify the following Boolean Expressions:

1)  $A.(B + A.B)$   
 $A.B$

2)  $\bar{A}.B + \bar{A}.\bar{B} + \bar{A}$   
 $\bar{A}$

3)  $B.(A + 1)$   
 $B$

4)  $A.(\bar{A} + B)$   
 $A.B$

5)  $A.B.(A + B)$   
 $A.B$

6)  $A + A.\bar{B}$   
 $A$

7)  $\bar{A}.B.C + \bar{A}.C$   
 $\bar{A}.C$

8)  $B.(A + \bar{A})$   
 $B$

9)  $B.(A + A)$   
 $B.A$

10)  $\overline{\bar{A}.\bar{B}} + A$   
 $1$

11)  $\bar{A}.B + A + A.B$   
 $A + B$

12)  $(A + B)(B + C.(A + \bar{A}))$   
 $A.C + B$

## Boolean Algebra

$$13) \quad (A + B). (A + C) \\ A + B.C$$

$$14) \quad \overline{\overline{A + B}} + B.\overline{A} \\ B$$

$$15) \quad \overline{A + B} + \overline{B + C} \\ \overline{A.C + B}$$

$$16) \quad \overline{A.B} + \overline{B + C} \\ \overline{A.B}$$

$$17) \quad A.(A + C).\overline{A} + \overline{\overline{A} + \overline{B.A}} \\ A.B$$

$$18) \quad \overline{\overline{B.A} + B.C} \\ B(A + C)$$

$$19) \quad \overline{\overline{\overline{A} + A.(A + B)} + \overline{B.C}} \\ A.(B + C)$$

$$20) \quad \overline{\overline{\overline{A.B.A}} + A.B} \\ A + B$$