## I. Fill in the blanks:

1. A + A’B = -----------
2. A(A+B) = ------------
3. A(A’+B) = -----------
4. The dual for the relation A.A=A is --------------
5. The dual for the relation A+A’=1 is ------------

## II. Multiple choice questions:

1. The complement of (A+BC+AB) is
(i) A’(B’+C’)
(ii) A’+B’+C’
(iii) A’B’C’
(iv) (A’+B’)C’

2. The complement of (A+B)(B+C)(A+C) is
(i) AB’+BC’+A’C
(ii) A’B’+B’C’+A’C’
(iii) AB+BC’+A’C
(iv) AB+BC+AC’

3. Y=(A+B)(A+C) is equivalent to
(i) A+BC
(ii) A’+BC
(iii) A+B’C
(iv) A+BC’

4. On reducing the following Boolean expression, A+A’+B+C the result we get is
(i) 1
(ii) 0

5. Y=AB+B+A+C is equivalent to
(i) ABC
(ii) A’BC
(iii) A+B+C
(iv) (A+B)C

1. Simplify the following identities :
(i) AB+(AC)’+AB’C (AB+C)
(ii) A’B’C’+A’BC’+AB’C’+ABC’

2. Prove the following using De Morgan’s theorem:
(i) (A+B)(A’C’+C)(B’+AC)’
(ii) [(AB+C’){(A+B)’+C}]’

3. Simplify ABC+AB’C+ABC’ to Y= A(B+C)
4. Simplify the expression {(AB’+ABC)’+A(B+AB’)}’
5. Prove that A’B’C’+A’B’C+A’BC’+A’BC+AB’C’ = A’+(B+C)’
6. Simplify the expression Y = A’B+ABD+AB’CD’+BC