Date .....

# Tutorial - 5

2. (i) 10100010 → 11116011
(ii) 11011011 → 10110110
(iii) 01110010 → 01000111

3. (i) 10100011 → 11001101
(ii) 11001110 → 10001011
(iii) 10101110 → 11001011

4. (a) $AB' + ABC' + A'B'C' + AC$
$= (A+B') \cdot (A+B'+C') \cdot (A'+B'+C) \cdot (A+C)$

(b) $(A+B+C) \cdot (A'+B+C') \cdot (A+C') \cdot (B+C)$
$= A \cdot BC + A'BC' + AC' + BC$

5. (a) $x'y'z + x'yz + xy'$
$= x'z(y'+y) + xy'$
$= x'z + xy'$

(b) $x + x'y$
$= x(y'+y) + x'y$
$= xy' + y$

Date .....

(c) $(x+y+z)(y'+x'+z)(x'+y+z)(x'+y+z')$

$= (x'y'z + xyz' + xyz + xy'z)'$

$= xyz' (x+y+z')(x'+y'+z)(x'+y)$

(d) $xy' + y'z' + x'z'$

$xyz + xyz' + xyz' + xyz + xyz' + xyz'$

(e) $(BC' + A'D)(AB + CD')$

$BC'A + 0 + 0 + 0 = BC'A.$

6. $(A + ((B+C').D + E').E)$

Complement : $A'(((B+C').D + E')E)'$

$= A'.((B+C').D.E + E'E)'$

$= A'.((B+C').D.E)'$

$= A'(B'C + D' + E)$

7. $A'B'C + DE' + B'CE'$

complement dual $ABC + D'E + BC'E$

Date .....

1. (a) i $(35)_{10}$ = 00110101

(ii) $(174)_{10}$ = 000101110100

(iii) $(2479)_{10}$ = 0010010000111001

(iv) $(8620)_{10}$ = 1000011000100000

(b) 100000000010 = 802

0001100100001001 = 1909

(c) (i) 58 + 21

0101 1000

0010 0001

0111 1001 → 79.

(ii) ~~578 + 259 8~~ 495 + 247 = 742

(iii) 5678 + 2198 = 8276.

(iv) 209 + 891 = 1100