EET 241 Final Formula Sheet

DeMorgan's Theorem

1. X * 0 = 0
2. X * 1 = X
3. X * X = X
4. X * $\overline{X}$ = 0
5. X + 0 = X
6. X + 1 = 1
7. X + X = X
8. X + $\overline{\overline{X}}$ = 1
9. $\overline{\overline{X}}$ = X

Commutative Law

10A. X * Y = Y * X

10B. X + Y = Y + X

Associative Law

11A. X(YZ) = XY(Z)

11B. X + (Y + Z) = (X + Y) + Z

Distributive Law

12A. X(Y + Z) = XY + XZ

12B. (X + Y)(W + Z) = XW + XZ + YW + YZ

Consensus Theorem

13A. X + $\overline{X}$Y = X + Y

13B. $\overline{X}$ + XY = $\overline{X}$ + Y

13C. X + $\overline{XY}$ + X + $\overline{Y}$

13D. $\overline{X}$ + X$\overline{Y}$ = $\overline{X}$ + $\overline{Y}$

DeMorgan's

14A. $\overline{XY}$ = $\overline{X}$ + $\overline{Y}$

14B. $\overline{X + Y}$ = $\overline{X}\,\overline{Y}$

Binary Decimal Hexadecimal

Bin	**Dec**	**Hex**
0000	0	0
0001	1	1
0010	2	2
0011	3	3
0100	4	4
0101	5	5
0110	6	6
0111	7	7
1000	8	7
1001	9	9
1010	10	A
1011	11	B
1100	12	C
1101	13	D
1110	14	E
1111	15	F