

SWITCHING THEORY & LOGIC DESIGN

UNIT-I NUMBER SYSTEMS, BOOLEAN ALGEBRA & SWITCHING FUNCTIONS

ASSIGNMENT I

1. a) What are the rules to be followed for 1's complement & 2's complement subtraction.
Determine $90.2 - 124.6$ using 1's & 2's complement.
b) Show that 246.5_{10} is $= F6.8_{16} = 366.4_8 = 11110110.1_2$
2. a) Compare weighted & Non-weighted codes with suitable example?
b) Encode 32.89_{10} to BCD code and Gray code?
3. a) Compare Error Detection & Error Correction.
b) Derive Hamming code for sequence 10100101
4. a) State various Boolean axioms, Laws and Theorems?
b) Apply various Boolean Law's to Prove $\overline{A.B.C} + \overline{B}.D + A.B.D + A.C = B + C$
c) Obtain Dual and complement of function $F(A,B,C,D) = A'B + A'BC' + A'BCD$.
5. a) Define and compare various forms of representing switching functions?
b) Develop Minimum and Maximum terms of $F(A, B, C, D) = A'B + AB'D + C'D$.
6. a) Explain Universal Gates? How would you realize And, Or, Not, XOR & XNOR gates using Universal gates.
b) What are properties of XOR Gate?
b) Design a circuit to implement function $f(a,b,c,d) = \sum m(0,2,4,6,9,11,13,15)$