Assignment 3

1) Write function of half adder. Draw and explain various implementations.
2) Explain about half subtractor.
3) What is function of binary multiplier? Explain.
4) Design a combinational circuit that accepts a 3-bit number and generates an output binary number equal to the square of input number.
5) Design a 4-bit adder subtractor circuit and explain the operation in details.
6) Draw and explain the working of carry look ahead adder.
7) Explain the functionality of a decoder.
8) With neat digram explain 3-8 decoder.
9) Implement the following Boolean function using 8:1 MUX.
   $F(A,B,C,D)=\sum(0,1,3,4,8,9,15)$
   $F(A,B,C,D)=\sum(1,3,4,11,12,13,14,15)$
10) Draw the basic flip-flop circuit with NAND gate and explain its operation.