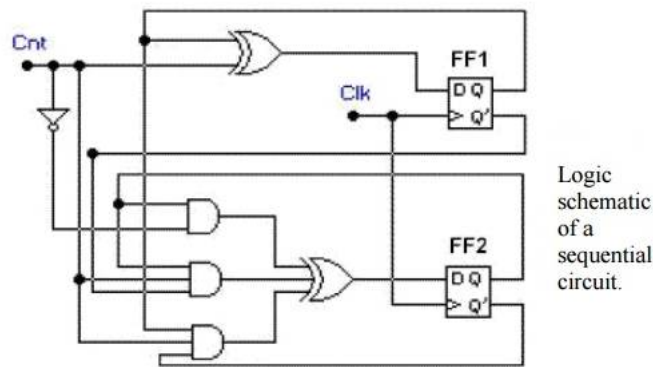


Department of Electronics and Communication Engineering

18ECC103J-Digital Electronic Principles

Assignment-II

1. Design 4-bit magnitude comparator to compare two four-bit number
2. Construct a logic circuit for BCD to Excess-3 code converter.
3. Implement a Full adder and Full subtractor using Decoder.
4. Implement the Boolean Expression $F(A,B,C,D) = \Sigma(0,1,3,4,8,9,15)$ using Multiplexer.
5. Design a 4-bit even parity generator and checker circuit.
6. Construct SR flip flop using T flip flop
7. Design synchronous counter for sequence: $0 \rightarrow 1 \rightarrow 3 \rightarrow 4 \rightarrow 5 \rightarrow 7 \rightarrow 0$, using T flip-flop
8. What is Race around Condition in JK Flip-flop? , explain how it rectified also draw the timing diagram.
9. Derive the state table and state diagram for the sequential circuit shown in Figure



10. Explain n-bit Johnson Counter the following
 - i) Total number of used and unused states in n-bit Johnson counter:
 - ii) Advantages and disadvantage of Johnson counter
 - iii) Applications of Johnson counter