

NEUB CSE 222 LAB 10: Sequential Circuit Design

North East University Bangladesh

Department of CSE

Course no: CSE 222

Experiment no: 10

Experiment Name: Sequential Circuit Design

CAUTIONS:

1. Don't switch on the supply of the circuit until you have verified the circuit carefully
2. Take readings of apparatus carefully
3. Take care of any bare circuit elements in energized condition
4. Never try to touch bare live wires

Objective

The primary objective of this experiment is to understand how sequential circuit works.

Apparatus Needed

- Trainer Board (Bread board)
- Logic Gate ICs (You decide what you need)
- Connecting wires
- LEDs
- Push Buttons / DIP switch
- Logic gates
- Flip-Flops: 74HC107, 74HC109, 74HC74

Procedure

Design the following circuits. Take help from lecture material where necessary.

1. Ring counter
2. Johnson Counter
3. Up/Down Counter
4. BCD ripple counter
5. A circuit that can detect 4 or more consecutive 1's in a string of bits coming through an input line.

Report

1. For the parts where schematic is not provided, design a circuit from block diagram provided.
2. Mention the tests and results for checking the circuits.
3. Comment on the learning from this LAB