Syllabus for Lab Exam (B and C Sections only)

// All the below exercises, you should know to do using Logisim and hardware**//**

1. Evaluation of Boolean expressions using basic gates
2. Evaluation of Boolean expressions (SoP and PoS) using universal gates
3. Code conversion circuits using basic and universal gates
    a. Binary to XS-3
    b. XS-3 to Binary
    c. Binary to Gray
    d. Gray to Binary
4. SoP and PoS simplification using K-Maps with basic and universal gates
5. Multiplexers using basic gates and IC
    a. 4:1
    b. 8:1
6. Demultiplexers using basic gates and IC
    a. 4:1
    b. 8:1
7. Priority Encoders using basic gates and IC
    a. Octal to Binary
    b. Decimal to BCD
8. Arithmetic Circuits using basic gates
    a. Half adder and half subtractor
    b. Full adder and full subtractor
    c. Full adder using two half adders
    d. Full adder using two full subtractors
    e. Parallel adder
9. Comparators
    a. 2 bit comparator using basic gates
    b. 4 bit comparator using IC (This will not be done in Logisim)
10. Latches and flip flops **/*Will not come for C section Batch 2 */**
    a. SR
    b. D
    c. JK
    d. T
11. Shift Registers (both left and right shift) using IC (In Logisim, use JK flip flop blocks)
    a. SISO
    b. PISO
    c. SIPO
    d. PISO
12. Counters (In Logisim, use JK flip flop blocks) **/*Will not come for B section Batch 1 */**
    a. Synchronous/Asynchronous up/down Binary counters
    b. Ring counter
    c. Johnson Counter