SHAHEED BHAGAT SINGH STATE TECHNICAL CAMPUS, FEROZEPUR

ROLL No: | | | | | | | | | | | | **Total number of pages:[1]**

B.Tech. || ECE || 4th Sem

Digital System Design

Subject Code: BTEC-402A

Paper ID:

Time allowed: 3 Hrs **Max Marks: 60**

Important Instructions:

- **All questions are compulsory**

PART A (10x 2marks)

Q. 1. Short-Answer Questions:

(a) Differentiate Combinational and sequential circuits.
(b) Can adder be used as a Subtractor, If yes explain how?
(c) Differentiate RAM and ROM.
(d) What is a multiplier?
(e) Differentiate half and full adder.
(f) How role of MUX is different from DEMUX?
(g) Differentiate PAL & PLA.
(h) Define FSM.
(i) What do you mean by asynchronous inputs of Flip-flop?
(j) What is the difference between latch and a flip-flop?

PART B (5×8marks)

Q. 2. What do you mean by FSM? Explain its limitations. CO3

OR

Explain the working of Moore and Mealy machines. CO3

Q. 3. Explain in detail the design of Sequential machine using ASM chart. CO2

OR

Explain ASM charts by taking suitable example. CO2

Q. 4. Implement Full adder using 8:1 MUX. CO1

OR

Write note on Programmable logic devices. CO1

Q. 5. Design a counter that count in sequence 0-1-2-3-4 and back to initial state using D flip-flops. The counter must avoid lock-out condition. CO4

OR

What is Flip-flop? Design a clocked JK Flip-flop. CO4

Q. 6. Design a 3-bit look ahead carry adder. CO1

OR

Design a BCD to Excess-3 code converter using PLA. CO1