SHAHEED BHAGAT SINGH STATE TECHNICAL CAMPUS, FEROZEPUR

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

B.Tech. || ECE || 6th Sem

Digital System Design

Subject Code: BTEC-904

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) What do you mean by Hazards?
(b) What is a multiplier?
(c) Compare synchronous counters with asynchronous counters.
(d) What is the difference between MUX and DEMUX?
(e) How will you classify adders?
(f) Differentiate PAL & PLA.
(g) What is FPGA?
(h) Define FSM.
(i) What is difference between latch and Flip-flop?
(j) List various types of ROM.

PART B (5×8marks)

Q. 2. Write note on Moore and Mealy machines. CO3

OR

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

Q. 3. Write notes on FPGA. CO4

OR

Design a BCD to Excess-3 code converter using PLA. CO4

Q. 4. Implement Full adder using MUX. CO1

OR

Can we use Adder as Subtractor? If yes, explain how? 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. CO2

OR

What is Flip-flop? Design a clocked SR Flip-flop. CO2

Q. 6. Explain in detail the working of JK flip-flop. Convert SR flip-flop to JK flip-flop. CO2

OR

Explain ASM charts by taking suitable example. CO2