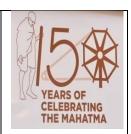


i)

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## AY 2021-22 IN-HOUSE CLASS TEST-II B. Tech.

## Computer Science and Engineering III SEMESTER

CSC303: COMPUTER ORGANIZATION

**Duration: 60 MINUTES** 09-11-2021 Max. Marks: 20 Answer all questions 1. Perform the operation (+50) – (-45) using addition and subtraction algorithm [2] a) with signed 2's complement data in binary numbers. What are the various methods for designing the hardwired control Unit. b) [3] Explain each with its diagram and working. Design the multiplier control in microprogrammed control. Also explain how [3] c) it works. Write Goals of Parallelism. 2. [1] a) Show the step-by-step multiplication process using Booth algorithm when the [3] following binary numbers are multiplied. Assume 5-bit registers that hold signed numbers. The multiplicand is + 14. (+14)\*(-12)Show the content of register E, A, Q and SC during the process of division of [3] 00011111 by 0011. Give four main differences between Microprogrammed and Hardwired [2] 3. a) Control Unit. An instruction pipeline consists of 4 stages fetch(F), decode(D), execute(E) and b) write(W). Each instruction spent one clock cycle for each stage. Given is 5 instructions (I1, I2, I3, I4, I5) in a set, but at stage four branch condition occurs.

ii) At what clock cycle, instruction I1, I2, I3, I4, I5 will complete its execution?

Draw the phase time diagram.

\*\*\*\*GOOD LUCK\*\*\*\*