Reg. No.:

Name :

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Mid-Term Examinations – October 2021

Programme	:	**B. Tech. – CSE**	Semester	:	**Fall 2021-22**
Course	:	**Computer Architecture & Organization**	Code	:	**CSE2003**
Faculty	:	**Prof. Anand Motwani**	Slot/Class No.	:	**A11+A12+A13 / 0548**
Time	:	**1½ hours**	Max. Marks	:	**50**

Answer all the Questions

Q. No.	Question Description	Marks
1	Briefly explain the Instruction Execution Cycle with the help of flowchart and example.	**10**
2	Discuss various formats of machine instruction. (6 marks). 40 different instructions are supported by the CPU. It has 24 GPRs. Given a 32-bit instruction word with an opcode, two register operands and an immediate operand. Specify the number of bits to be used to represent the immediate operand. (4 marks)	**10**
3	Given two Arrays in memory: A = [a_1, a_2, a_3 …. a_{100}] and X = [x_1, x_2, x_3 …. x_{100}]. Write instruction sequence to compute $Y = \sum_{i=1}^{100} a_i x_i$ using 2-address instruction in context to direct addressing.	**10**
4	Perform addition in IEEE single precision arithmetic: **Add:** A = 9.999 x 10^{1} and B = 1.610 x 10^{-1}	**10**
5	**a.** Write the normalized representation of the following (6 marks): **i. 0101101.101** **ii.** $5\frac{3}{4}$ **iii. 232** Represent 347.625 in single-precision format. (4 marks)	**10**

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