Printed page: 2 Subject Code: ACSE0305/AMICSE0305/ACSEH0305

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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute)

Affiliated to Dr. A.P. J. Abdul Kalam Technical University, Uttar Pradesh, Lucknow

Course: B.Tech Branch: CSE/IT/MTECH INT/CSR/CS

Semester: III **Sessional Examination: Second**

Subject Name: Computer Organization and ArchitectureYear- (2022- 2023)

Time: 1.15Hours **Max. Marks:30**

General Instructions:

- *This Question paper consists of 2 pages & 5 questions. It comprisesthree Sections -A, B, &C. You are expectedto answer them as directed.*
- *Section A–Q.No- 1 isof one 1 mark each &Q.No- 2 carries 2 markeach.*
- *Section B- Q. No- 3 carries5 marks each.*
- *Section C Q.No-4 &5carries6markseach.Attempt any one part a orb*

SECTION – A [08Marks]

1. All questions are compulsory- (4×1=4)

a. The IEEE standard followed by almost all the computers for floating point arithmetic _____. (1) CO2

a) IEEE 260
b) IEEE 488
c) IEEE 754
d) IEEE 610

b. Which of the following is used for binary multiplication? (1) CO2

a) Restoring Multiplication
b) Booth's Algorithm
c) Pascal's Rule
d) Digit-by-digit multiplication

c. The sign magnitude representation of -1 is _____ (1) CO2

a) 0001 b) 1110 c) 1000 d) 1001

d. The fastest data access is provided using _____ CO3

a) Cache b) DRAM
c) SRAM d) Registers

2. **Attempt all parts** (2×2=4)

a. What is divide overflow? (2) CO2

b. Explain mantissa and exponent with help of an example. (2) CO2

SECTION – B [10Marks]

3. **Answer any two of the following-** (2×5=10)

a. What is an Array Multiplier? Explain 2x2 bit array multiplier. (5) CO2

b. Explain floating point multiplication with the help of flowchart. (5) CO2

c. Explain different type ofinstructions. (5) CO3

SECTION – C [12Marks]

4 **Answer any one of the following-** (1×6=6)

a. Design the 4-bit Carry Look Ahead Adder and explain its operation. (6) CO2

b. Explain pipelining stages for 5-instructions with diagram. (6) CO3

5. **Answer any one of the following-** (1×6=6)

a. Explain Division Algorithm with the help of flowchart. (6) CO2

b. Show the systematic multiplication of (-7) X (3) using Booths Algorithm. (6) CO2