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**GIET UNIVERSITY, GUNUPUR – 765022**  
M.C.A (First Semester) Examinations, March – 2023  
**MCA20102 – Computer Organization and Architecture**

Time: 3 hrs

Maximum: 70 Marks

(The figures in the right hand margin indicate marks.)

**PART – A****(2 x 10 = 20 Marks)****Q.1. Answer all questions**

	CO #	Blooms Level
a. Distinguish between Computer Organization and Computer Architecture.	CO1	K4
b. Write the structure of buses used in Computer System.	CO1	K1
c. Define a micro instruction with an example.	CO1	K1
d. What is the use of Complements? Discuss 1's and 2's Complement?	CO2	K1
e. What is the use of Normalization in Floating Point Numbers?	CO2	K1
f. What is the use of ROM and types of ROM?	CO3	K1
g. What is the use of Pipelining concept with a neat diagram?	CO3	K1
h. Define Cache Memory.	CO3	K1
i. What is the difference between Synchronous and Asynchronous Data transfer?	CO4	K1
j. Define Interrupt and types of Interrupts.	CO4	K1

**PART – B****(10 x 5 = 50 Marks)**Answer ANY FIVE questions

	Marks	CO#	Blooms Level
2. a. Write about Reduced Instruction Set Computer with the help of a block diagram.	5	CO1	K1
b. Draw the flowchart of an Instruction Cycle and explain.	5	CO1	K1
3.a. What is the purpose of addressing modes? Explain various addressing techniques.	5	CO1	K1
b. Distinguish between Microprogrammed Control and Hardwired Control.	5	CO1	K4
4. a. Explain in detail about Fixed Point Representation.	5	CO2	K1
b. Show $(85.88)_{10}$ in single and double Precision formats.	5	CO2	K2
5.a. Discuss Booth's Multiplication Algorithm with a neat flowchart.	5	CO2	K2
b. Divide 101011 with 101101 and show the result in binary and verify the result.	5	CO2	K2
6. a. What is the use of Arithmetic Pipeline with a neat flowchart.	5	CO3	K1
b. Discuss in detail about SIMD concept.	5	CO3	K2
7.a. Explain Cache Memory with Associative Mapping Technique.	5	CO3	K1
b. Explain ROM with a neat block diagram and its function table.	5	CO4	K1
8. a. Distinguish between Programmed I/O and Memory I/O.	5	CO4	K4
b. What is the use of DMA? Discuss with a block diagram.	5	CO4	K1

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