

Code No.: CS302PC

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**CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS**

**II-B.TECH-I-Semester End Examinations (Regular) - February- 2023
COMPUTER ORGANIZATION AND ARCHITECTURE
(Common to CSE, IT, CSC & CSM)**

[Time: 3 Hours]

[Max. Marks: 70]

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 20 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A

(20 Marks)

1. a) Write some of the components of a Microprocessor. [2M]
- b) What is Computer Architecture? [2M]
- c) Write any two Micro program examples. [2M]
- d) Explain the Instruction Format. [2M]
- e) Find the 2's complement of 10010. [2M]
- f) What are the Decimal Arithmetic Operations? [2M]
- g) Explain DRAM. [2M]
- h) What is the Input-Output Interface? [2M]
- i) Define Inter-Processor Arbitration. [2M]
- j) Write any two characteristics of RISC. [2M]

PART-B

(50 Marks)

2. a) Explain Arithmetic Logic Shift unit with an example. [5 M]
 - b) What is an Interrupt? Explain about various types of Interrupts. [5 M]
- OR**
- 3.a) What is Shift Register? Explain the general capabilities of Shift Registers. [5M]
 - b) Discuss about Memory Reference Instructions. [5M]
4. Explain the basic organization of a Micro-programmed Control Unit and the generation of Control Signals using Micro-program. [10M]
- OR**
5. Describe the Control Unit Organization with a separate Encoder and Decoder functions in a hardwired control. [10M]
 6. Explain Booth Multiplication Algorithm with an example. [10M]
- OR**
7. Discuss Arithmetic addition and subtraction with signed-2's complement representation. [10M]
 - 8.a) Discuss Direct Memory Access (DMA). [5M]
 - b) Explain Interrupt Initiated Input-Output. [5M]
- OR**
9. List any six ways of improving the Cache Memory performance. [10M]
 10. Explain the differences between CISC and RISC. [10M]
- OR**
11. What are Multiprocessors? Mention the categories of Multiprocessors? Explain Single Instruction Stream and Multiple Data Stream (SIMD). [10M]
