

Code No.: R22CS302PC

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

**II-B.TECH-I-Semester End Examinations (Regular) - February- 2024**

**COMPUTER ORGANIZATION AND ARCHITECTURE**

**(Common for CSE, IT, CSC, CSD, CSM)**

**[Time: 3 Hours]**

**[Max. Marks: 60]**

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

Part A is compulsory which carries 10 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**

**(10 Marks)**

- 1. a) What is Bus? Draw the single bus structure. [1M]
- b) What is an instruction cycle? [1M]
- c) What is Accumulator register? [1M]
- d) What are the advantages of microprogrammed control unit? [1M]
- e) Write equal signed-magnitude of the +14. [1M]
- f) How the floating-point numbers are represented and used in digital arithmetic operations? [1M]
- g) Define Asynchronous data transfer. [1M]
- h) What is Interrupt? [1M]
- i) Define parallel processing. [1M]
- j) What is inter process communication. [1M]

**PART-B**

**(50 Marks)**

- 2. Draw the flowchart for instruction cycle and explain. [10M]
- OR**
- 3.a) Compare and Contrast the Computer Design and Computer Architecture. [5 M]
- b) Compare hardwired control with microprogrammed control. [5 M]
- 4. Explain the design of control unit. [10M]
- OR**
- 5. What is a micro program? Explain the flowchart of a micro program for the Add src, Rdst instruction which adds the source operand to the contents of the register Rdst and places the sum in Rdst. [10M]
- 6. Explain the floating point addition- subtraction unit with a neat diagram. [10M]
- OR**
- 7. With the help of hardware schematic and flowchart, explain the implementation of Multiplication operation in computers. [10M]
- 8.a) What is an auxiliary memory? Explain. [5 M]
- b) What is a cache memory? What are cache hit and cache miss? Define hit ratio. [5 M]
- OR**
- 9. Discuss about Main Memory and its types in details. [10M]
- 10. Illustrate about RISC pipeline vector processing. [10M]
- OR**
- 11. What are multi processors? Discuss their characteristics. [10M]

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