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B022412(022)

B. Tech (Fourth Semester) Examination, Nov.-Dec. 2021

(CSE Branch) AICTE

COMPUTER SYSTEM ARCHITECTURE

Time Allowed : Three hours

Maximum Marks : 100

Minimum Pass Marks : 35

Note : *Attempt all questions. Attempt any two parts from (a), (b) and (c) of each unit. Each part carries 10 marks.*

Unit-I

1. (a) What is Addressing Mode? Explain the types of Addressing modes in detail.

(b) Explain Hardwired control and Micro programmed control with neat diagram in detail. Also differentiate between Hardwired control and Micro programmed control.

(c) Explain microinstruction format with its field in detail.

Unit-II

2. (a) Explain Booth's algorithm in detail. Multiply the two numbers 23 and –9 by using the Booth's multiplication algorithm.

(b) Explain Storing and Non-Restoring method of integer division in detail. Perform Division Restoring Algorithm : Dividend = 11 Divisor = 3.

(c) Explain Number representation with its types and operations in detail.

Unit-III

3. (a) What are the different types of mapping used in cache organization? Explain each in detail.

(b) Draw and explain memory hierarchy. Explain different types of memory with neat diagram.

(c) Explain Multi-module memories and interleaving with example.

Unit-IV

4. (a) Explain I/O mapped I/O and Memory mapped I/O in detail.

(b) What is Interrupt? Explain different types of interrupt and interrupt handling mechanism in detail.

(c) What is DMA? Explain the working of DMA with advantages and disadvantages.

Unit-V

5. (a) What is Parallel Processing? Explain the concept of Vector processing in detail.

(b) Explain the concept of Pipelining. Explain various types of pipelining in detail.

(c) Describe Flynn's Classification of parallel processing with neat diagram and example.