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SET-I

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CMR TECHNICAL CAMPUS
UGC AUTONOMOUS
B.Tech - IV Semester, Regular End Examinations, July-2022
Computer Organization (20CS405PC)
(Common to CSE, IT, CSM & CSD)

Time: 3 Hours

Max. Marks: 70

Answer Any Five Questions
All Questions Carry Equal Marks

5 X 14 = 70 Marks

1. a. Explain Digital Computer in detail with a neat diagram. [7M]
b. Discuss various types of number systems with an example. [7M]
2. a. Explain Multiple-Register configuration with a neat diagram. [7M]
b. Discuss Arithmetic Logic Shift Unit with a neat diagram. [7M]
3. a. Explain the common bus system architecture used in Computer registers. [7M]
b. Explain Program Interrupt with a Flow Chart. [7M]
4. a. Discuss Control Memory in Detail. [7M]
b. Describe the design of Control Unit. [7M]
5. a. Explain the following: [7M]
i. Zero-Address Instruction
ii. RISC Instruction
b. Explain the following: [7M]
i. Three-Address Instruction
ii. Two-Address Instruction
ii. One-Address Instruction
6. a. Explain Booth Multiplication Algorithm with an Example. [7M]
b. Explain any Division Algorithm with a Flow Chart. [7M]
7. a. Discuss Main Memory in Detail [7M]
b. Explain the following: [7M]
i. I/O Bus and Interface Modules
ii. Isolate vs. Memory Mapped I/O
8. a. Discuss Inter connection structures. [7M]
b. Discuss the Characteristics of Multiprocessors. [7M]

**CMR TECHNICAL CAMPUS
UGC AUTONOMOUS**

B. Tech.IV Semester Supply End Examinations, February-2024

Computer Organization

Common to CSE, IT, CSM, CSD, AIML, CSG

Time: 3 Hours

Max. Marks: 70

Note

- i. This Question paper contains Part- A and Part- B.
- ii. All the Questions in Part A are to be answered compulsorily.
- iii. All Questions from Part B are to be answered with internal choice among them.

PART-A

10 X 02 = 20 Marks

		Marks	CO	BL	
1.	a	Define computer. Specify the different types of computers.	2 marks	CO1	L1
	b	Draw the Block diagram of Digital Computer.	2 marks	CO1	L2
	c	Give a brief note on instruction cycle.	2 marks	CO2	L6
	d	What is the difference between a direct and an indirect address instruction?	2 marks	CO2	L2
	e	Draw and explain the addition and subtraction of floating point numbers.	2 marks	CO3	L5
	f	Define Booth's multiplication algorithm.	2 marks	CO3	L1
	g	What is the need of I/O interface module.	2 marks	CO4	L2
	h	Explain the memory hierarchy.	2 marks	CO4	L4
	i	Explain the characteristics of multiprocessor system.	2 marks	CO5	L5
	j	Distinguish the characteristics of RISC and CISC.	2 marks	CO5	L4

PART- B

5 X 10 = 50 Marks

		Marks	CO	BL	
2.	a	Explain different functional units of a digital computer with neat sketch.	5 marks	CO1	L5
	b	Explain about the shift micro operations' and the design of basic computer	5 marks	CO1	L4
OR					
3.	a	Write and explain different types of computers based on the functions they perform.	5 marks	CO1	L6
	b	Explain the fixed point representation with an example.	5 marks	CO1	L4
4.	a	Differentiate between hardwired and micro programmed computers.	5 marks	CO2	L2

- b Explain the input output configuration with interrupts. And Explain the flowchart for interrupt cycle with an example. 5 marks CO2 L5
- OR
- 5 a Show to construction of bus system with four registers and explain various functions used to select registers by bus. 5 marks CO2 L1
- b Explain memory reference instructions with an example each. 5 marks CO2 L3
- 6 a Draw and explain the addition and subtraction of floating point numbers. 5 marks CO3 L2
- b Explain the flow chart of the hardware multiply algorithm. 5 marks CO3 L5
- OR
- 7 a Explain the various arithmetic micro operations. 5 marks CO3 L4
- b Give the block diagram for register set in CPU. 5 marks CO3 L2
- 8 a What is auxiliary memory? Explain the various memory components used as auxiliary memory in computer systems. 5 marks CO4 L1
- b Explain different types of mapping functions in cache memory. 5 marks CO4 L5
- OR
- 9 a What is virtual memory? With the help of neat sketch explain the method of virtual to physical address translation. 5 marks CO4 L2
- b Explain the following with respect to asynchronous data transfer.
a) Strobe control b) Handshaking 5 marks CO4 L4
- 10 a Explain the interconnection structure for multiprocessor systems. 5 marks CO5 L3
- b Explain arithmetic pipeline with example. 5 marks CO5 L5
- OR
- 11 a Elucidate array processor in detail. 5 marks CO5 L2
- b Explain various Interconnection Structures. 5 marks CO5 L4

CO : Course Outcomes

BL : Bloom's Taxonomy Levels

L 1 : Remembering

L 2 : Understanding

L 3 : Applying

L 4 : Analysing

L 5 : Evaluating

L 6 : Creating
