R22

Code No: R22A1261

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

II B.Tech I Semester Supplementary Examinations, June/July 2024

Computer Organization & Architecture

(CSE-CS, CSE-AIML, CSE-IOT & B.Tech-AIML)

Roll No										

Time: 3 hours **Max. Marks: 60**

Note: This question paper contains two parts A and B
Part A is compulsory which carries 10 marks and Answer all questions.
Part B Consists of 5 SECTIONS (One SECTION for each UNIT). Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 10 marks.

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PART-A (10 marks)

Write all answers of this part at one place)

1	A	What is bus?	**[1M]**
	B	Name different types of shift operations.	**[1M]**
	C	Draw micro instruction format?	**[1M]**
	D	Write about control word?	**[1M]**
	E	Define LRU?	**[1M]**
	F	State locality of reference?	**[1M]**
	G	Compare SRAM and DRAM?	**[1M]**
	H	What is Asynchronous data transfer?	**[1M]**
	I	List pipeline harards?	**[1M]**
	J	What is parallel processing?	**[1M]**

PART-B (50 marks)

SECTION-I

2	A	Explain the architecture of a basic Computer?	**[5M]**
	B	Briefly write about instruction codes?	**[5M]**
		OR	
3	A	Perform the arithmetic operation (+42)+(-13) and (-42)-(-13) in binary using signed 2's complement representation for negative numbers?	**[5M]**
	B	What are computer registers? Explain?	**[5M]**

SECTION-II

4	A	Discuss the various types of instruction formats?	**[5M]**
	B	Write about Stack Organization?	**[5M]**
		OR	
5	A	Describe in detail about Program control instructions?	**[5M]**
	B	Explain the functioning of a micro-programmed control unit with a neat diagram?	**[5M]**

SECTION-III

6	A	Draw the memory hierarchy in a computer system?	**[5M]**
	B	List different types of cache memory mappings and Explain Direct mapping method?	**[5M]**

OR

7	A	What is the need for replacement? Explain various cache block replacement algorithms**?**	**[5M]**
	B	Draw and explain the block diagram of RAM and ROM	**[5M]**

SECTION-IV

8	A	Explain the block diagram of I/O interface?	**[5M]**
	B	List four peripheral devices that produce an acceptable output for a person to understand? Discuss asynchronous data transfer?	**[5M]**

OR

9	A	What are interrupts? What is their need?	**[5M]**
	B	Explain various registers in DMA interface with their purpose?	**[5M]**

SECTION-V

10	A	What are the basic concepts of pipelining?	**[5M]**
	B	Describe about Instruction pipeline?	**[5M]**

OR

11	A	Give the main characteristics of RISC processors?	**[5M]**
	B	What various protocols to handle cache coherence?	**[5M]**

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