Hall Ticket Number:

II/IV B.Tech (Regular\Supplementary) DEGREE EXAMINATION

February, 2023   **Common to CSE/CB/DS & IT Branches**

Third Semester   **Computer Organization**

Time: 3 Hours   Maximum Marks:70

Answer question 1 compulsory.   **(14X1 = 14 Marks)**
Answer one question from each unit.   **(4X14=56 Marks)**

1.	a)	Convert $(F3)_{16}$ into decimal.	CO1	L2	1M
	b)	State the formulas for (r-1)'s Complement and r's Complement	CO1	L1	1M
	c)	What is register transfer language?	CO1	L1	1M
	d)	Name any four logic microoperations.	CO1	L1	1M
	e)	Define instruction code and operation code.	CO2	L1	1M
	f)	List out the memory-reference instructions.	CO2	L1	1M
	g)	How to represent control variables?	CO2	L2	1M
	h)	Show the microinstruction format for the control memory.	CO2	L1	1M
	i)	State the operations on a stack.	CO3	L1	1M
	j)	What are the most common fields found in instruction format?	CO3	L1	1M
	k)	Expand RISC and CISC.	CO3	L3	1M
	l)	When is status command used?	CO4	L2	1M
	m)	Define bootstrap loader.	CO4	L1	1M
	n)	Show the connection of I/O bus to input-output devices.	CO4	L3	1M

Unit –I

2.	a)	Draw the arithmetic logic shift unit and show the function table for arithmetic logic shift unit.	CO1	L1	7M
	b)	What are the number systems conversions available? Explain with an example.	CO1	L2	7M

(OR)

3.	a)	What are the different ways to implement a common bus system and explain with a neat sketch	CO1	L2	7M
	b)	Label the diagram for 4-bit binary adder and 4-bit adder-subtracter.	CO1	L3	7M

Unit –II

4.	a)	Name the registers for the basic computer with number of bits used and describe their functionality.	CO2	L3	7M
	b)	Interpret the symbols and binary code used for microinstruction fields.	CO2	L2	7M

(OR)

5.	a)	State the phases of an instruction cycle? Design the flowchart for instruction cycle	CO2	L1	7M
	b)	Show the block diagram of the microprogram sequencer and discuss.	CO2	L2	7M

Unit –III

6.	a)	Examine the procedure involved in reverse polish notation with an example.	CO3	L3	7M
	b)	Inspect the hardware for signed-magnitude addition and subtraction.	CO3	L2	7M

(OR)

7.	a)	List out any seven addressing modes and interpret each addressing mode with syntax.	CO3	L2	7M
	b)	Display the flowchart for Booth multiplication operation and discuss the operations performed.	CO3	L4	7M

Unit –IV

8.	a)	Examine the working of associate memory with a neat diagram.	CO4	L2	7M
	b)	Illustrate the mapping procedures while considering the organization of cache memory.	CO4	L3	7M

(OR)

9.		Analyse the various modes of data transfer to and from peripherals	CO4	L2	14M