U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

October 2024 Supplementary Examinations

Programme: B.E. **Semester: III**
Branch: CSE (ICB) / CSE(DS) / AI&DS **Duration: 3 hrs.**
Course Code: 23DC3ESCOA **Max Marks: 100**
Course: Computer Organization and Architecture

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

		UNIT - I	CO	PO	Marks
1	a)	Identify different functional units of a Digital Computer and explain with a neat diagram.	*CO1*	*PO1*	**06**
	b)	Utilizing the connection between processor and memory, explain basic operational concepts.	*CO1*	*PO1*	**07**
	c)	With neat representation explain Little-Endian and Big-Endian schemes.	*CO1*	*PO1*	**07**
		UNIT - II			
2	a)	Illustrates how the keyboard and display devices are connected to the processor with neat diagram.	*CO1*	*PO1*	**10**
	b)	Construct an I/O interface for an input device and explain	*CO1*	*PO1*	**10**
		UNIT - III			
3	a)	Construct internal organization of a 32M x 8 dynamic memory Chip	*CO3*	*PO3*	**10**
	b)	What is the necessity of DMA? Explain DMA and possible registers used in DMA interface.	*CO3*	*PO3*	**10**
		OR			
4	a)	Identify and explain the 3 different Memory mapping functions	*CO3*	*PO3*	**10**
	b)	With a neat diagram explain Virtual Memory address translation	*CO3*	*PO3*	**10**
		UNIT - IV			
5	a)	Design 4-bit carry-look ahead adder circuit	*CO3*	*PO3*	**10**
	b)	Explain sequential circuit binary multiplier with a neat block diagram and an example.	*CO3*	*PO3*	**10**
		OR			
6	a)	Consider M=13 and Q= -6, solve using bit pair recoding multiplier method. Also show multiplicand selection decision table.	*CO3*	*PO3*	**10**

		b)	Illustrate restoring and non restoring division with suitable examples	*CO3*	*PO3*	**10**
			UNIT - V			
	7	a)	With a neat diagram, demonstrate the working of hardwired control.	*CO2*	*PO2*	**08**
		b)	List the steps needed to execute the instruction **Load R5, X(R7)**	*CO2*	*PO2*	**06**
		c)	Elucidate the four phases in the evolution of microprocessor design.	*CO2*	*PO2*	**06**

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