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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Third Semester, B.E. - Computer Science and Engineering

Semester End Examination; March / April - 2022

Computer Organization

Time: 3 hrs *Max. Marks: 100*

Course Outcomes

The Students will be able to:

CO1: Understand and analyze the machine instructions and program execution.

CO2: Understand and explain the I/O organisation.

CO3: Understand and explain the memory system.

CO4: Apply the algorithms used for performing various arithmetic operations.

CO5: Understand and Explain the Concept of Basic Input/Output.

Note: ***I) PART - A*** *is compulsory.* ***Two*** *marks for each question.*

II) PART - B*: Answer any* ***Two*** *sub questions (from a, b, c) for a Maximum of* ***18 marks*** *from each unit.*

Q. No.		Questions	Marks	BLs	COs	POs
		I : PART - A	**10**			
I	a.	Define software.	2	L1	CO1	PO1
	b.	Define with an example LSB and MSB.	2	L1	CO2	PO1
	c.	Define assembly language.	2	L1	CO3	PO1
	d.	List any two input and output devices.	2	L2	CO4	PO1
	e.	What is the need for cache memory?	2	L1	CO5	PO1
		II : PART - B	**90**			
		UNIT - I	**18**			
1	a.	With a neat diagram, explain the functional units of a computer.	9	L1	CO1	PO1
	b.	List and explain the performance parameters considered to measure the system performance.	9	L1	CO1	PO1
	c.	Explain the functions performed by a computer.	9	L1	CO1	PO1
		UNIT - II	**18**			
2	a.	Explain different addressing modes with an example.	9	L2	CO2	PO1
	b.	Explain different types of instructions with an example.	9	L2	CO2	PO1
	c.	Explain the different steps involved in instruction execution sequence.	9	L2	CO2	PO1
		UNIT - III	**18**			
3	a.	What are the operations performed by a call instruction? Illustrate the process of subroutine linkage using link register.	9	L2	CO3	PO1,2
	b.	With an example, list shift and rotate instruction.	9	L1	CO3	PO1,2
	c.	Write an assembly language program to add two 8-bit numbers considering carry.	9	L3	CO3	PO1,2

Contd... 2

	UNIT - IV	**18**			
4 a.	With a neat diagram, explain single bus organization of the data path in a computer system.	9	L3	CO4	PO1,2
b.	Give the difference between hardwired and microprogrammed control unit.	9	L3	CO4	PO1,2
c.	Define bus master. Explain various types of bus arbitration with a neat diagram.	9	L3	CO4	PO1,2
	UNIT - V	**18**			
5 a.	Explain different types of memory.	9	L2	CO5	PO1
b.	Explain associate and set associative mapping techniques of cache memory.	9	L2	CO5	PO1
c.	Explain the Booth algorithm with an example.	9	L2	CO5	PO1

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