## **Question Paper**

Exam Date & Time: 11-Jun-2022 (02:00 PM - 05:00 PM)



## FOURTH SEMESTER B.TECH(IT) END SEMESTER EXAMINATIONS, JUNE 2022 COMPUTER ORGANIZATION & MICROPROCESSOR SYSTEMS [ICT 2256]

Marks: 50

Duration: 180 mins.

Α

## Answer all the questions.

Instructions to Candidates: Answer ALL questions. Missing data, if any, may be suitably assumed.			
1)		Explain the following instructions with an example for each.	(5)
	A)	i. IMUL ii. XLAT iii. JLS iv. CMPSB v. XCHG	
	B)	Explain the following pins of 8086 microprocessor.	(3)
		i. READY ii. RESET iii. NMI	
	C)	Differentiate effective address and physical address of 8086 with an example.	(2)
2)		Divide $25_{(10)}$ by $14_{(10)}$ using restoring division algorithm indicating all the steps.	(5)
	A)		
	B)	Write an assembly language program to input an 8-bit binary number from keyboard and display its 2's complement on the screen. For example, if the input is 11111101 then display 00000011.	(3)
	C)	What are the advantages of segmentation in 8086?	(2)
3)		Given M = $-25_{(10)}$ and Q = $18_{(10)}$ , multiply using Booth's algorithm indicating all the steps.	(5)
	A)		
	B)	Explain the significance of various control flags of 8086.	(3)
	C)	Explain the following addressing modes of 8086 with an example for each.	(2)
		i. Fixed port addressing ii. Register relative	
4)		Design the processing unit for 4-bit x 4-bit Booth's multiplier indicating all the control points.	(5)
	A)		
	B)	With a neat diagram, explain the MODE-1 operation of 8255 for data output.	(3)
	C)	Differentiate macro and procedure.	(2)
5)		With a neat diagram, show how DC motor can be interfaced to 8086 using 8254. Also write the procedure for the same.	(5)
	A)		

- B) Write an assembly language program to convert a 2-digit hexadecimal number available in the memory into BCD and store the result in the memory.
- C) Explain the mechanism used in 8086 to demultiplex the address and data bus.

(2)

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