Reg. No.												

Question Paper Code	11595

B.E. / B.Tech. -DEGREE EXAMINATIONS, NOV/DEC 2022

Fifth Semester

Computer Science and Engineering

(Common to Information Technology)

20ESEC502 - MICROPROCESSORS AND MICROCONTROLLERS

(Regulations 2020)

Duration: 3 Hours | Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level, CO
1.	List out the various flag registers available in 8086.	*2,K1,CO1*
2.	Differentiate between Microprocessor and Microcontroller.	*2,K1,CO1*
3.	What is an I/O processor?	*2,K1,CO2*
4.	What are the Interrupt Signals in 8086?	*2,K1,CO2*
5.	Write 8086 mnemonics for BCD Addition.	*2,K1,CO3*
6.	Define Modular Programming.	*2,K1,CO3*
7.	What is I/O Interfacing?	*2,K1,CO4*
8.	Differentiate Timer and Counter.	*2,K1,CO4*
9.	List out the Special Function Registers of 8051.	*2,K1,CO5*
10.	Which register is used for serial communication in 8051. Illustrate it.	*2,K1,CO5*

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	Describe the Internal Architecture of 8086 Microprocessor with neat Diagram.	*13, K2,CO1*
		OR	
	b)	Explain the Various Instruction sets of 8086 with examples.	*13, K2,CO1*
12.	a)	Examine all the pins and signals of 8086 processor with neat diagram.	*13, K2,CO2*
		OR	
	b)	Explain the System bus timing of maximum and minimum mode in 8086 with suitable diagram?	*13, K2,CO2*
13.	a)	(i) Write an Assembler code in 8086 to rotate byte 3 places to the left.	*7, K2,CO3*
		(ii) Write a Code to Covert Binary to ASCII and Vice Versa.	*6, K2,CO3*

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create

OR

b) Explain in detail the password validation with example code. *13, K2,CO3*

14. a) Illustrate the process of DMA with the help of 8237 DMA controller. *13, K2,CO4*

OR

b) Explain in detail about Programmable Interrupt Controller. *13, K2,CO4*

15. a) Explain the various Addressing modes in 8051 along with examples. *13, K2,CO5*

OR

b) Explain the timers available in 8051 and also discuss the utility of TCON and TMOD registers. *13, K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Draw the diagram to interface a stepper motor with 8051 microcontroller and explain. Write its ALP to run the stepper motor in both forward and reverse direction with delay. *15,K3,CO3*

OR

b) You are provided with 4x4 matrix key board, a microcontroller and a seven segment display. Design a system which has to display the hexadecimal code of the corresponding key pressed. Assume all other relevant details. Give a program for your design. *15,K3,CO5*