22 JUN 2023

Reg. No.													

Question Paper Code	11933

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2023

Fifth Semester

Electronics and Communication Engineering

(Common to Computer Science and Engineering & 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.	Write the flags of 8086.	2,K1,CO1
2.	Differentiate between Macro and Subroutine.	2,K2,CO1
3.	State about External & Internal Bus.	2,K1,CO2
4.	Draw the timing diagram for an interrupt acknowledgement on an 8086 System.	2,K2,CO2
5.	What are the common criteria for password validation?	2,K1,CO3
6.	What is modular programming and why is it important?	2,K1,CO3
7.	What is the purpose of a programmable timer/counter in a computer system?	2,K1,CO4
8.	How does the programmable interrupt controller handle interrupt prioritization?	2,K2,CO4
9.	What is a microcontroller and what are its key features?	2,K1,CO6
10.	What is a stepper motor and how does it differ from a regular DC motor?	2,K2,CO6

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	Explain the significance of microprocessors and microcontrollers in modern computing.	13,K2,CO1
		OR	
	b)	Discuss the architecture and organization of the Intel 8086.	13,K2,CO1
12.	a)	Explain the purpose and functions of the various pins in the 8086 microprocessor.	13,K2,CO2
		OR	
	b)	Explain the construction and interpretation of a timing diagram for the Intel 8086 microprocessor.	13,K2,CO2

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

13. a) Explain the techniques to prevent common password vulnerabilities, such as dictionary attacks or brute-force attacks. *13,K2,CO3*

OR

b) Explain the procedure to handle errors or invalid data when converting between binary and ASCII representations. *13,K2,CO3*

14. a) Explain the concept of memory-mapped I/O and I/O-mapped I/O. *13,K2,CO4*

OR

b) Explain the role of the Intel 8237 DMA controller in managing data transfers. *13,K2,CO4*

15. a) Explain the significance of the Intel 8051 microcontroller in the field of embedded systems. *13,K2,CO6*

OR

b) Discuss the steps involved in controlling a stepper motor using the Intel 8051 microcontroller. *13,K2,CO6*

PART - C (1 × 15 = 15 Marks)

16. a) Summarize the steps involved in writing and running an ALP for the Intel 8051. *15,K3,CO5*

OR

b) Explain the Instruction set of 8051 with 2 examples each. *15,K3,CO5*