

B.Tech - Odd Sem : Semester in Exam-I
Academic Year:2024-2025
23EC2106R - PROCESSORS AND CONTROLLERS
Set No: 3

Time:		Max.Marks: 50					
S.NO	Answer All Questions	Choice	Options	Marks	CO	CO BTL	
1.	Answer all the Questions			12Marks	CO1	3	2
1.A.	List the functions of ALE and MN/MX' pins in the 8086 microprocessor?			2Marks	CO1	3	2
1.B.	Mention the process of 20 bit address calculation in the 8086 microprocessor?			2Marks	CO1	3	2
1.C.	List the functions of any two rotate instructions in the 8086 processor with an example?			2Marks	CO1	3	2
1.D.	Discuss the function of any two general-purpose registers in the 8051 microcontroller?			2Marks	CO2	3	2
1.E.	Write an ALP to perform a logical NAND operation on two input values with the 8051 microcontroller?			2Marks	CO2	3	2
1.F.	What are the primary functions of timers in the 8051 microcontroller?			2Marks	CO2	3	2
2.	Answer all the Questions			16Marks	CO1	3	2
2.A.	Describe the structure and purpose of the flag register in the 8086 microprocessor?			4Marks	CO1	3	2
2.B.	Mention the Default Segment & Offset registers in 8086 microprocessor?			4Marks	CO1	3	2
2.C.	Describe the role of the stack pointer in the 8051 microcontroller and how it operates discuss with an example?			4Marks	CO2	3	2
2.D.	Explain the different modes of operation for the timers in the 8051 microcontroller?			4Marks	CO2	3	2

3.	Answer all the Questions	choice Q-4	11Marks	CO1	3	3
3.A.	Discuss the direct, immediate, and register addressing modes with suitable examples.		5Marks	CO1	3	2
3.B.	Illustrate and explain the timing diagram for the memory write cycle in the minimum mode of the 8086 microprocessor.		6Marks	CO1	3	3
4.	Answer all the Questions		11Marks	CO1	3	3
4.A.	Discuss the advantages of Memory Segmentation and list the types of data transfer and bank selection concepts in the 8086 microprocessor.		5Marks	CO1	3	2
4.B.	Write a program to sort an array of 10 numbers in ascending order using the bubble sort algorithm?		6Marks	CO1	3	3
5.	Answer all the Questions	choice Q-6	11Marks	CO2	3	3
5.A.	Discuss in detail the 8051 PSW register & PSW Bank selection procedure.		5Marks	CO2	3	2
5.B.	Write a program to generate a time delay using Timer 1 in Mode 2 of the 8051 microcontroller?		6Marks	CO2	3	3
6.	Answer all the Questions		11Marks	CO2	3	3
6.A.	Explain how Port 3 is used for general-purpose I/O and special functions in the 8051 microcontroller.		5Marks	CO2	3	2
6.B.	Write an ALP to copy the data 49H into the RAM location from 50h-58h using an indirect addressing mode with a loop?		6Marks	CO2	3	3