Question Paper Code: R15A31EC02

R15

ANURAG Engineering College

(An Autonomous Institution)

III B.Tech I Semester Supplementary Examinations, Dec-2023/Jan-2024

MICROPROCESSORS AND MICROCONTROLLERS

(COMPUTER SCIENCE & ENGINEERING)

Time: 3 Hours **Max.Marks:75**

Section – A (Short Answer type questions) (25 Marks)

	Answer All Questions		Course Outcome	B.T Level
1.	Explain the PSW register of 8086 µp.	3M	CO1	L2
2.	Discuss about the physical segmentation of memory in 8086 µp.	2M	CO1	L2
3.	Discuss the following assembler directives. i) ASSUME ii) PUBLIC iii) OFFSET	3M	CO1	L1
4.	Mention the various addressing modes of 8086.	2M	CO2	L2
5.	Briefly explain about the block diagram of 8251 USART.	3M	CO2	L2
6.	Explain about the BSR mode of operation of 8255.	2M	CO2	L2
7.	Explain the organization of internal RAM in 8051 µc.	3M	CO3	L2
8.	Give the salient features of 8051 microcontroller.	2M	CO3	L1
9.	Give the format and bit definitions of TMOD register of 8051 µc.	3M	CO3	L1
10.	Give the features of various modes of Timer operation in 8051.	2M	CO3	L1

Section B (Essay Answer Type Questions)

Answer all questions, each question carries equal marks. **(5 X 10M = 50M)**

11.A)	Explain the maximum mode operation of 8086 µp with the help of timing diagrams.	10M	CO1	L3
	OR			
B)	i) Explain the following instructions of 8086 µp. a) AAS b) IMUL c) CBW d) LOOP e) JNC ii) What is memory segmentation? List out its advantages.	10M	CO1	L2&L3
12.A)	i) Write an ALP for 8086 µp to transfer 10 bytes of data from one memory location to another. ii) Discuss about the string manipulating instructions.	10M	CO1	L3
	OR			
B)	i) Write an ALP for 8086 µp to sort an array of numbers in descending order. ii) Discuss about the branch and call instructions of 8086 µp.	10M	CO1	L3
13.A)	Explain the architecture of 8255 PPI and its various modes of operation.	10M	CO2	L3
	OR			
B)	Draw the block diagram of 8259 and explain each block? Discuss the salient features of 8259?	10M	CO2	L3

14.A)	Draw and explain the block diagram of 8051 microcontroller.	10M	CO3	L3
	OR			
B)	Discuss in detail about the Addressing Modes of 8051 microcontroller?	10M	CO3	L3
15.A)	i) Explain the serial communication interrupt in 8051 microcontroller. ii) Explain the interrupt structure of 8051 μc.	10M	CO3	L3
	OR			
B)	Explain the timer modes in 8051 micro controller.	10M	CO3	L2