Question Paper Code: R15A32EC02

R15

ANURAG Engineering College

(An Autonomous Institution)

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

MICROPROCESSORS AND MICROCONTROLLERS

(ELECTRONICS AND COMMUNICATION ENGINEERING)

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

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

Answer All Questions		Course Outcome	B.T Level	Marks
1.	What are the advantages of memory segmentation?	CO1	L1	2M
2.	What are the hardware interrupts of 8086 and explain?	CO1	L1	3M
3.	Explain LOOP and DAA instruction operations?	CO2	L2	2M
4.	Explain what REPE prefix does when coupled with SCASB instruction	CO2	L2	3M
5.	What is setting or conversion time in DAC?	CO3	L1	2M
6.	Mention few advantages of 8251 USART?	CO3	L2	3M
7.	List the features of 8051 microcontrollers?	CO4	L1	2M
8.	A switch is connected to pin P1.0 and an LED to pin P2.7. Write a program to get the status of the switch and send it to the LED?	CO4	L2	3M
9.	What are the advantages of interrupt-based data transfer?	CO5	L1	2M
10.	What is the effect of clearing the EA bit of the IE register?	CO5	L2	3M

Section B (Essay Questions)

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

11. A)	Explain the 8086 architecture with block diagram?	CO1	L2	10M
	OR			
B)	Draw neatly the basic 8086 system timing (both read and write) diagrams?	CO1	L3	10M
12. A)	Assume BX = 0158, DI = 10A5, Displacement = 1B57, DS =2100 & DS is used as segment Register, calculate Effective and Physical address. For the following addressing modes? i) Direct ii) Register indirect and Register Relative iii) Based index and Relative Based index	CO2	L3	10M
	OR			
B)	Write an 8086-assembly language program to add a constant value to a series of 10 numbers stored in memory?	CO2	L3	10M
13. A)	Explain 8255 PPI with the help of neat block diagram?	CO3	L2	10M
	OR			
B)	Explain ICW's and OCW's of 8259 PIC?	CO3	L2	10M
14. A)	Sketch the Internal memory organization in 8051 and explain the same?	CO4	L3	10M
	OR			
B)	Discuss in detail about the Addressing Modes of 8051 Microcontroller?	CO4	L3	10M

15. A)	Describe about external hardware interrupts of 8051 microcontroller?	CO5	L3	10M
	OR			
B)	Explain operation of timer in mode 1. Discuss programming steps to generate time delay using mode 1. Write program to generate delay of 1 second using timer 0 in mode 1?	CO5	L3	10M