Reg. No.												

Question Paper Code	11578

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

Fifth Semester

Electronics and Instrumentation Engineering

(Common to Instrumentation and Control Engineering)

20EIPC502 - 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.	What is the purpose of ALE Signal in 8085?	2,K1,CO1
2.	What will be the content of accumulator and flag register after executing the following codes MVI A,FF MVI B,FF ADD B ADI 01 HLT	2,K2,CO1
3.	Differentiate Microprocessors and Microcontrollers.	2,K2,CO2
4.	What will be the content present in A and B register after executing the instruction a) MUL AB and b) DIV AB?	2,K2,CO2
5.	Draw the control word format register of 8255.	2,K2,CO3
6.	What do you mean by key debouncing? How will you solve this problem?	2,K2,CO3
7.	What is the need for driver circuit while interfacing 8051 with stepper motor?	2,K1,CO4
8.	Write assembly language program in 8051 to multiply two numbers.	2,K2,CO4
9.	Differentiate CISC and RISC instruction set.	2,K2,CO5
10.	Differentiate Embedded processor and General purpose processor.	2,K2,CO5

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	With a neat sketch, explain the different types of interrupts in 8085.	13,K2,CO1
		OR	
	b)	Briefly explain the signals used in Timing diagram. Draw the timing diagram for the instruction MOV A,M.	13,K2,CO1
12.	a)	Explain the architecture of 8051 with necessary diagrams.	13,K2,CO2

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

OR

b) Describe the functionality of Ports in 8051 with necessary diagrams. *13,K2,CO2*

13. a) Demonstrate the different modes of operations of 8254 with an example. *13,K2,CO3*

OR

b) Describe the interfacing diagram and operation of D/A converter with 8085. *13,K2,CO3*

14. a) Interface DC servo motor with 8051. Explain the operation of H-Bridge configuration. Write the assembly language code to rotate the motor in clockwise and anti-clockwise direction. *13,K2,CO4*

OR

b) Draw the block diagram of Keyboard and Display interface with 8051 and explain each block in detail. Write the sample code to read a key press. *13,K2,CO4*

15. a) With a neat sketch, explain the architecture of 32 bit microprocessor. *13,K2,CO5*

OR

b) Describe the different bus configuration in advanced processor. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Illustrate the control system design of washing machine using 8085 microprocessor programming. *15,K3,CO3*

OR

b) (i) How many times the following loop will be executed and what will be the content of A and Flag registers after the complete executions? *8,K3,CO1*

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MVI A, 7F
MVI B, 04
MVI C, 06
L1: ADD C
DCR B
JNZ L1
HLT
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(ii) Compare the instructions (a) MVI A, 00 (b) XRA A. Analyze the instruction and in which places these instructions are better than other instruction *7,K3,CO1*