Roll No. 217101

End Semester Examination 2024

Name of the Course: BCA
Name of the Paper: Microprocessor

Semester: I V
Paper Code: TBC 402

Time: 3 Hour's

Maximum Marks: 100

Note:

(I) All Questions are compulsory.
(ii) Answer any two sub questions among a, b, and c in each main question.
(iii) Total marks in each main question are twenty.
(iv) Each question carries 10 marks.

Q1	**(10 X2 = 20 Marks)**	**CO 1**
(a)	What is the microprocessor and discuss the evolution of INTEL microprocessors.	
(b)	Draw the neat diagram of internal architecture of the 8085 microprocessor.	
(c)	List and explain all Interrupt signals of 8085 microprocessor.	
Q2	**(10 X2 = 20 Marks)**	**CO 2**
(a)	Explain the flag registers of 8085 microprocessor.	
(b)	Write short notes on the following. (i) Memory Mapped I/O (ii) Peripheral I/O	
(c)	(i) Calculate the address range of RAM size 16 kB and 32 kB interfaced with microprocessor 8085. (ii) Calculate the execution time required for the instruction MVI A, 32H in microprocessor 8085, if the clock frequency is 2Mhz.	
Q3	**(10 X2 = 20 Marks)**	**CO 3**
(a)	Find the control word of 8255 if, (i) All A, B, C ports are outputs and port A and B are in mode 0. (ii) All A, B, C ports are inputs and port A and B are in mode 0. (iii) PA=Output, PB=Input, PCH=Output, PCL=Input and port A and B are in mode 1. (iv) PA=Input, PB=Output, PCH=Input, PCL=Output and port A and B are in mode 0.	
(b)	What do you mean by DMA? Draw and discuss internal block diagram of DMA controller.	
(c)	Draw and explain internal block diagram of programmable interval timer and explain its modes of operation in detail.	
Q4	**(10 X2 = 20 Marks)**	**CO 4**
(a)	Explain all the addressing modes in 8085 with suitable example.	
(b)	Explain the following 8085 instructions with suitable example. 1. STA & LDA 2. ADD & SUB 3. CMP & CPI 4. JMP & JNC 5. HLT & NOP	
(c)	(i) Write an 8085-assembly language program and draw flowchart to add two 8- bit numbers (with and without carry) and store 8-bit result in register C. (ii) Write an 8085-assembly language program and draw flowchart to swap the content of memory location 3000H & 3051H.	
Q5	**(10 X2 = 20 Marks)**	**CO 5**
(a)	Sketch the architecture of the 8051 microcontroller and describe its features and applications.	
(b)	Draw the pin diagram of 8051 and explain its all-ports pins (P0-P3).	
(c)	How many types of interrupts in 8051 and explain the steps in executing an interrupt.	