

Subject Code: XXXXX

Roll No:

--	--	--	--	--	--	--	--	--	--

BTECH
(SEM-5) MICROPROCESSOR AND MICROCONTROLLER 2021-22

TIME:3 HOUR

Total Marks: 100

Instruction: Attempt the questions as per the given instructions. Assume missing data suitably.

SECTION - A

Attempt *All Parts* in Brief

2*10 = 20

Q1	Questions	Marks
(a)	Discuss the specifications of 8085 microprocessor.	2
(b)	List the disadvantages of memory mapped I/O.	2
(c)	State the number of T-states required for following instructions: MVIA, 34 H, LXI H 2000 H.	2
(d)	List all the maskable and non-maskable interrupts of 8085.	2
(e)	Explain the physical address, offset address and segment address in context to 8086.	2
(f)	Discuss the various memory segments in 8086.	2
(g)	Explain the organization of stack in 8051.	2
(h)	Describe the bit-addressable RAM space available in 8051.	2
(i)	Discuss the significance of following SFR's of 8051- PSW, TCON.	2
(j)	Describe the following instructions of 8051-(i) MOVA, @R0 (ii) MOVX A, @DPTR.	2

SECTION - B

Attempt Any Three of the following

3*10 = 30

Q2	Questions	Marks
(a)	Discuss the significance of following signals of 8085 in detail: HOLD, READY, ALE, HLDA and CLK OUT.	10
(b)	Explain the execution of instructions: LXI H 2000 H, LDA 2000 H, RAL, JNC, MVI. State the memory occupied by these instructions.	10
(c)	Explain the CWR of 8255 Programmable Peripheral Interface and also discuss The BSR mode.	10
(d)	Analyze the PSW of 8051 and also explain the relevant flag bits.	10
(e)	Discuss the significance of V0 ports along-with their dual roles in 8051.	10

SECTION - C

Attempt Any One of the following

5*10 = 50

Q3	Questions	Marks
(a)	Interface EPROM of 16 K using 8K x 8 chips and a RAM of 8K using 4K x 8 chips to the system lines of 8085 using a 3 x 8 decoder.	10
(b)	Demonstrate the interfacing of output and input devices with 8085 along-with a suitable diagram. Also explain the relevant instructions used.	10
Q4	Questions	Marks
(a)	Write an assembly language program to find the largest number in a series of number stored from location 2000 H to 200 A H. Store the result at location 3000 H. Explain the program with a relevant flowchart.	10
(b)	Discuss the priorities of the interrupts available in 8085. Give a detailed explanation of SIM and RIM.	10
Q5	Questions	Marks
(a)	Discuss the various addressing modes available in 8086 along-with examples.	10
(b)	Demonstrate the architecture of 8253/54 programmable timer and discuss the control word register.	10
Q6	Questions	Marks
(a)	Analyze the architecture of 8051 microcontroller along-with a suitable block diagram.	10
(b)	Illustrate the addressing modes of 8051 microcontroller. Support your answer with suitable examples.	10
Q7	Questions	Marks

(a)	Discuss the interrupts of 8051. Also give a detailed description of IE and IP registers.	10
(b)	Analyze the process of serial communication in 8051 and also discuss the relevant Special Function Registers (SFR's) used in serial communication.	10