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BTECH
(SEM V) THEORY EXAMINATION 2023-24
MICROPROCESSOR & MICROCONTROLLER

TIME: 3 HRS

M.MARKS: 100

Note: 1. Attempt all Sections. If require any missing data, then choose suitably.

SECTION A

1. Attempt all questions in brief. 2 x 10 = 20

| Q no. | Question | Marks | CO |
|-------|---|-------|----|
| a. | Explain the term Microprocessor. | 2 | 1 |
| b. | Describe the term Memory Mapped I/O. | 2 | 1 |
| c. | Define the term Indexing in Microprocessors. | 2 | 2 |
| d. | What is the function of a rotation instruction? | 2 | 2 |
| e. | Explain the term 16-bit Microprocessors. | 2 | 3 |
| f. | Elaborate on the term Interfacing Devices. | 2 | 3 |
| g. | Describe the term Microcontroller. | 2 | 4 |
| h. | What are Pins used for in any Microprocessor? | 2 | 4 |
| i. | Define the term Ports in Microcontrollers. | 2 | 5 |
| j. | Explain the use of Analog-Digital-Converter in any microcontroller operation. | 2 | 5 |

SECTION B

2. Attempt any three of the following: 10 x 3 = 30

| | | | |
|----|--|----|---|
| a. | Draw and Explain the Timing and Control Unit of 8085 Microprocessor. | 10 | 1 |
| b. | Explain the types of Jump instructions available in 8085 Microprocessors. | 10 | 2 |
| c. | Define different addressing modes associated to 8086 Microprocessor. | 10 | 3 |
| d. | Explain the Memory Organization in 8051 Microcontroller. | 10 | 4 |
| e. | Explain the LCD Interfacing with proper diagram with 8051 Microcontroller. | 10 | 5 |

SECTION C

3. Attempt any one part of the following: 10 x 1 = 10

| | | | |
|----|---|----|---|
| a. | Draw and describe the diagram to interface one 4 KB ROM and one 16 KB RAM with 8085 Microprocessor. | 10 | 1 |
| b. | Define and draw the timing diagram for the below mentioned instruction: MVI B, 20 H. | 10 | 1 |

4. Attempt any one part of the following: 10 x 1 = 10

| | | | |
|----|---|----|---|
| a. | Define the working and addressing modes associated to following instructions of 8085 Microprocessor: LXI, XCHG, DAD, CMP, RAR. | 10 | 2 |
| b. | Describe different types associated to Interrupts. Explain 8085 interrupts with all specifications associated. | 10 | 2 |



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5. Attempt any one part of the following: 10 x 1 = 10

| | | | |
|----|--|----|---|
| a. | What are Maximum and Minimum Mode of operations in 8086 Microprocessor? Define the Pin functions of Pin number 24 to 31 in Maximum and Minimum mode, separately. | 10 | 3 |
| b. | Describe the flow chart of Initialization process in 8259 chip and explain the ICW1 & ICW2 associated to 8259 chips. | 10 | 3 |

6. Attempt any one part of the following: 10 x 1 = 10

| | | | |
|----|---|----|---|
| a. | Describe all the SFRs associated to 8051 Microcontroller. | 10 | 4 |
| b. | Explain all the ports and associated functions on port pins in 8051 microcontrollers. | 10 | 4 |

7. Attempt any one part of the following: 10 x 1 = 10

| | | | |
|----|---|----|---|
| a. | What is a Timer circuit? Explain the Timer operations associated to 8051 microcontrollers by using Timer Registers. | 10 | 5 |
| b. | Define different addressing modes associated to 8051 microcontrollers. | 10 | 5 |

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