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BTECH
(SEM V) THEORY EXAMINATION 2024-25
MICROPROCESSOR & MICROCONTROLLER

TIME: 3 HRS**M.MARKS: 100****Note:** Attempt all Sections. In case of any missing data; choose suitably.**SECTION A****1. Attempt all questions in brief. 2 x 10 = 20**

Q no.	Question	CO	Level
a.	What is a microprocessor?	1	K1
b.	Explain the role of the 8085 microprocessor in a computer system	1	K2
c.	What are the basic flowchart symbols used in programming?	2	K1
d.	Explain the purpose of the ADD instruction in 8085.	2	K2
e.	Explain the function of the BHE (Bus High Enable) pin in 8086.	3	K2
f.	What is the purpose of the 8237 DMA controller?	3	K1
g.	What is the main function of the 8051 microcontroller?	4	K1
h.	Explain the function of the special function registers in the 8051.	4	K2
i.	What is the role of an assembler in programming 8051?	5	K1
j.	How are input and output ports addressed in 8051?	5	K1

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

a.	Describe the architecture of the 8085 microprocessor and its operations.	1	K1
b.	What are the various instructions used for arithmetic operation in the 8085 microprocessors.	2	K2
c.	With the help of the block diagram, describe 8237 DMA controller in detail.	3	K1
d.	Describe the internal structure of the 8051 microcontroller. What are the key components and registers in the 8051 architecture?	4	K1
e.	Explain arithmetic instruction. Write a program to add two 16-bit numbers, the numbers are FC45 H and 02EC H.	5	K2

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

a.	Explain the different types of memory used in microprocessor-based systems. How is memory interfaced with the 8085 MPU?	1	K2
b.	Using timing diagrams, explain the operation of the 8085 microprocessor during an input/output operation.	1	K3

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

a.	Write an 8085 assembly language program to determine the 2's complement of an 8-bit number without using any logical instruction. Store the result in memory.	2	K3
b.	Explain the various logical instructions related to rotating the accumulator bits.	2	K2

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

a.	Describe the pin configuration of the 8086 microprocessor. What are the key features of its memory organization?	3	K1
b.	Explain segmentation in the 8086 microprocessor. How does it aid in memory addressing and management?	3	K2



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

a.	Explain the functions of PSW and flag bits in the 8051 microcontroller. How do they affect the program execution?	4	K2
b.	Analyze the role of special function registers (SFRs) in the 8051 microcontroller. How do these registers facilitate the operation of the microcontroller?	4	K4

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

a.	Describe the different data types and assembler directives used in 8051 assembly programming.	5	K1
b.	Write an assembly program to interface a LCD and keypad with the 8051 microcontroller.	5	K3

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