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B. TECH
(SEM V) THEORY EXAMINATION 2021-22
MICROPROCESSOR & ITS APPLICATIONS

Time: 3 Hours**Total 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**

- a. What is microprocessor.
- b. Define Instruction cycle, machine cycle and T-states in Microprocessor.
- c. Explain the role of Program counter.
- d. Evaluate the Number of T state required in following instruction:
(i) ADI 32H (ii) STA 2450H.
- e. Calculate the physical address of memory location, If the content of CS register is 348AH and content of IP is 5540H.
- f. What do you understand by stack.
- g. Compare the instruction LDA 2000H and LDAX B.
- h. What do you mean by ALP.
- i. How many Interrupts can be handled by PIC(8259) in cascade mode.
- j. Enlist the different modes supported by 8255 PPI.

SECTION B

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

- a. Explain the general architecture of a microcomputer system with diagram.
- b. Explain the hardware interrupts of 8085 microprocessor with the help of suitable diagram.
- c. Explain the flag register of 8086 microprocessor with suitable diagram.
- d. Write an assemble language program for addition of an array of five numbers.
- e. Explain the DMA operation of 8257 with microprocessor with suitable diagram.

SECTION C

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

- (a) Illustrate the different addressing modes of microprocessor with suitable example.
- (b) Explain the assembly language, machine language & high-level language. Which languages is used in microprocessor?

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

- (a) Explain the architecture of 8085 microprocessor with suitable diagram.
- (b) Explain the timing diagram for MVI 40H. instruction.

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

- (a) Show the concept of memory segmentation? List the various segment register in 8086. Also define the advantages of memory segmentation.

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- (b) With the help of suitable diagram, explain the architecture of 8086 microprocessor.
- 6. Attempt any *one* part of the following: 10 x 1 = 10**
- (a) Discuss the elements used in flow chart with a suitable example.
- (b) Illustrate the function of following instructions:
(i) SPHL (ii) LDA 4000H (iii) MVI A,M (iv) XCHG (v) RAL
- 7. Attempt any *one* part of the following: 10 x 1 = 10**
- (a) With the help of block diagram illustrate the operation of 8255 Programmable Peripheral Interface (PPI).
- (b) Illustrate the block diagram of 8259 PIC and explain its different modes of operation.