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B.TECH
(SEM VI) THEORY EXAMINATION 2022-23
MICROPROCESSOR AND MICROCONTROLLER

Time: 3 Hours**Total Marks: 100****Note:** 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 the meaning of ALE signal?
- (b) The content of the accumulator are 93H and contents of register C are B7H. Add both contents and determine the sign, carry and zero flag status.
- (c) Define the term RISC and CISC.
- (d) What are the advantage of using memory segmentation?
- (e) What is BSR mode?
- (f) What do you mean by RS-232C?
- (g) Show the status of CY, AC and P flag after addition of 56H & 95H in the following instruction.
MVI A, 56H
MVI B, 95H
ADD B
- (h) What is the difference between microprocessor and microcontroller?
- (i) What do you mean by ARM?
- (j) What is PSW?

SECTION B

2. Attempt any three of the following:**10x3=30**

- (a) Draw the internal architecture of 8085. Also explain flag register of 8085.
- (b) Draw the pin diagram of 8086 and also discuss about BIU and EU.
- (c) Explain 8237 DMA controller in detail.
- (d) State the features of 8051 and also draw the block diagram of microcontroller.
- (e) What do you mean by assembly language programming? What is the function of JUMP and CALL instruction?

SECTION C

3. Attempt any one part of the following:**10x1=10**

- (a) Discuss the various addressing modes of 8085 in detail.
- (b) Explain the classification of the instruction set of 8085 microprocessor with suitable examples.

4. Attempt any *one* part of the following: 10x1=10

- (a) Explain minimum and maximum operating modes of 8086 with timing diagram.
- (b) Draw and explain the internal block diagram of 8086.

5. Attempt any *one* part of the following: 10x1=10

- (a) Draw and explain block diagram of IC-8253/54.
- (b) Explain 8255 PPI in detail. And discuss its mode 1 and mode 2 operation.

6. Attempt any *one* part of the following: 10x1=10

- (a) Draw and explain the pin configuration of 8051.
- (b) Draw the internal memory organization of 8051 and also Explain register banks and stack.

7. Attempt any *one* part of the following: 10x1=10

- (a) Discuss the different types of assembler directives of 8051 microcontroller.
- (b) What is the difference between PIC and ARM processor? Explain their application areas.