

Paper Id: Roll No.

B Tech
(SEM V) THEORY EXAMINATION 2022-23
MICROPROCESSOR & 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) Compare between Microprocessor and Microcontroller.
- (b) Evaluate the role of temporary registers in 8085.
- (c) Name the 06 operating modes of 8254.
- (d) List all the maskable and non-maskable interrupts of 8085.
- (e) List the Difference between Memory Mapped I/O and I/O Mapped peripheral interfacing techniques.
- (f) Explain Direct Memory Access (DMA).
- (g) State the function of RS1 and RS0 bits in the flag register of Intel 8051 microcontroller.
- (h) Draw flag register of 8085 mp showing the status of each flag at its proper position
- (i) List all the interrupts available in 8051.
- (j) Explain the difference between a JMP instruction and CALL instruction of 8085 Microprocessor.

SECTION B

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

- (a) Explain the following instruction f 8085 with its addressing modes, bytes, machine cycle and T states.
 - (i) MOV A, M
 - (ii) ADI 75H
 - (iii) LXI H, 2500
 - (iv) JNC addr.
 - (v) ANA A.
- (b) With the help of a functional block diagram and working of 8257 DMA controller.
- (c) Design a system for 8085 such that it contain 4KB of EPROM and 2KB of RAM using two 2KB of EPROM and two 1KB of RAM. Draw the complete interfacing diagram.
- (d) Differentiate between (1) POP and PUSH (2) CALL and Return.
- (e) List the interrupts available in the 8051 microcontroller. Explain interrupt enable (IE) SFR and Interrupt priority (IP) SFR.

SECTION C

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

- (a) Draw the architecture of 8085 and mention its various functional blocks.
- (b) Design a hexadecimal up counter which count from 00H to FFH in a system with a 1.0 μ s clock period.

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

- (a) Explain the memory segmentation of 8086 in details.
- (b) WAP for 8085 μ p to find positive no. in the given set of 10 numbers.

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

- (a) With the help of a functional block diagram explain the organization and working of 8255 microprocessor.
- (b) Describe the architecture of 8051 with neat diagram.

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

- (a) Draw the architecture of 8086 Microprocessors and explain its all blocks.
- (b) Explain the various generations of microprocessor.

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

- (a) Draw and explain interfacing diagram of DAC with 8051 microcontroller. Write program to generate sine wave at the output of DAC.
- (b) Explain the various addressing modes of 8051 microcontroller.

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