Printed Pages:02 **Sub Code: KEC-502**

Paper Id: 231663 **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 μs 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 µp 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.