USN

17EC46

Fourth Semester B.E. Degree Examination, July/August 2022 Microprocessor

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Explain the architecture of 8086 microprocessor with neat block diagram.

 b. Explain the flag register bits of 8086 and write its format. (10 Marks)

 (08 Marks)
 - c. Explain the significance of the following pins:
 - (i) M/IO
- ii) ALE

(02 Marks)

OR

- 2 a. Explain the addressing modes of 8086 and give an example for each addressing mode.
 (10 Marks)
 - b. Write a program to exchange a block of 5 bytes data between two memory locations.

(10 Marks)

Module-2

- 3 a. What are assembler directives? Explain any four directives. (10 Marks)
 - b. Write 8086 program to arrange the number in ascending order.

(10 Marks)

OR

- 4 a. List and explain the string manipulation instructions of 8086 microprocessor. (10 Marks)
 - b. Write an ALP to convert packed BCD number to its ASCII equivalent.

(10 Marks)

Module-3

5 a. Explain the dedicated interrupts of 8086.

(10 Marks)

b. Explain the operation of (i) Push and Pop instructions (ii) Call and ret instructions. (10 Marks)

OR

- 6 a. Draw the interrupt vector table and write the sequence of operations that are performed when an interrupt is recognized. (10 Marks)
 - b. Write a program to generate a delay of 100ms that runs on 10 MHz frequency in 8086 microprocessor. Also show the calculations. (10 Marks)

Module-4

- 7 a. Explain the maximum mode operation of 8086 with block diagram. (10 Marks)
 - b. Interface two 8K×8 EPROM and two 8K×8 RAM chips to 8086. Show the memory mapping. (10 Marks)

OR

8 a. Draw a timing diagram for read and write operation in minimum mode.

(10 Marks)

b. Explain the PID 8255 with the block diagram.

(10 Marks)

Module-5

- 9 a. Differentiate between:
 - (i) Harvard and Von-Neumann architectures
 - (ii) CISC and RISC architecture

(10 Marks)

- b. Explain the following INT-21 DOS function calls:
 - i) Function 09h

ii) Function 01h

iii) Function 0Ah

iv) Function 02h CMRIT LIBRAR

(10 Marks)

OR

10 a. Write an ALP to rotate the stepper motor one rotation in clockwise and one rotation in anticlockwise direction. (10 Marks)

b. Write a program to generate a square wave in 8086. Also show the interfacing diagram.

(10 Marks)