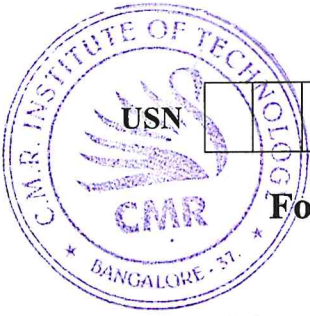


CBCS SCHEME



USN

--	--	--	--	--	--	--	--	--	--

15EC42

Fourth Semester B.E. Degree Examination, June/July 2024 Microprocessor

Time: 3 hrs.

Max. Marks : 80

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

Module-1

- a. Explain the internal architecture of 8086 with its neat block diagram. (08 Marks)
b. Explain any four addressing modes of 8086 microprocessor with an example each. (08 Marks)

OR

- a. Write a program to exchange of two block of data from 5000H to 6000H memory locations. (08 Marks)
b. Explain any three conditional branch instructions with example. (03 Marks)
c. Explain the flag register of 8086. (05 Marks)

Module-2

- a. Write an ALP to add two ASCII numbers N1 and N2 and save the result at RES as a hexadecimal number. (08 Marks)
b. Write an ALP to replace the "##" in a given string of 50 characters with "***". (08 Marks)

OR

- a. What are assembler directives? Explain the following assembler directives : (04 Marks)
i) DQ ii) ASSUME iii) DUP.
b. Write an ALP to copy a 100 Byte block of data from LOC1 to LOC2 using the MOVS instruction. (06 Marks)
c. A two digit BCD number is typed using a keyboard. Write an ALP to read the value, save it as BCD number at LOC as packed BCD. (06 Marks)

Module-3

- a. What is stack? Explain the stack operation for PUSH and POP instruction of 8086 with neat diagram. (08 Marks)
b. Define a macro. Write a program using macro to display a message. (04 Marks)
c. Write a delay program to generate a delay of 0.1 sec, using an 8086 system operating at 10 MHz. (04 Marks)

OR

- a. Define Interrupts. Explain TYPE0 and TYPE2 Interrupts. (06 Marks)
b. Explain hardware interrupts of 8086 microprocessor. Explain maskable and NM Interrupts. (06 Marks)
c. Bring out the differences between MACRO and procedure. (04 Marks)

Module-4

- 7 a. Sketch the minimum mode configuration of 8086 and explain the operation briefly. (08 Marks)
- b. Interface two 4K×8 EPROM and two 4K×8 static RAM chips to 8086. The addresses of RAM and ROM should start from FC000H and FE000H respectively. (08 Marks)

OR

- 8 a. Sketch the maximum mode configuration of 8086 and explain the operation briefly. (08 Marks)
- b. Interface a 7-segment LED to 8086 using a 74LS373 latch for I/O address 0CH. Write a program that simulates a single digit seconds counter on the LED digit. (Assume a one second software delay is available) (08 Marks)

CMRIT LIBRARY
BANGALORE - 560 037

Module-5

- 9 a. With a neat diagram explain the interfacing of 1.8° step stepper motor and also write clockwise rotation program for 100 steps assuming 'DELAY' procedure is available. (08 Marks)
- b. Write interfacing diagram of DAC AD7523 with an 8086 CPU. Write an ALP to generate Sawtooth waveform. (08 Marks)

OR

- 10 a. With a neat diagram explain the 8087 coprocessor. (08 Marks)
- b. Explain with a neat diagram of 8254 internal architecture. (08 Marks)
