

# CBCS SCHEME

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15EC42

## Fourth Semester B.E. Degree Examination, June/July 2019 Microprocessor

Time: 3 hrs.

Max. Marks: 80

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

### Module-1

- 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

- 2 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

- 3 a. Explain any four Assembler directives with one example each. (08 Marks)
- b. Write an ALP to reverse the string "MY INDIA" and store in memory location STR2. (08 Marks)

OR

- 4 a. Explain the following instructions with example each.  
(i) RCL (ii) SAR (iii) TEST (iv) LOOPZ. (08 Marks)
- b. What are the machine control instructions? Explain any 3 instructions. (06 Marks)
- c. What is the difference between IRET and RET? (02 Marks)

### Module-3

- 5 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

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

### Module-4

- 7 a. Sketch the maximum mode configuration of 8086 and explain the operation briefly. (08 Marks)
- b. Interface a 4x4 keyboard to 8086 and write the program logic flow. (08 Marks)



OR

- 8 a. Interface a multiplexed 7-segment display to 8086 and explain. (08 Marks)  
b. With a neat diagram, explain 8255 PPI device and also explain control register of 8255. (08 Marks)

**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)

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