MICROPROCESSOR

Full Marks – 70

Pass Marks – 28

Time – Three hours

The figures in the margin indicate full marks for the questions.

Answer question No. 1 and any *four* from the rest.

1. Answer the following short questions :

    5×2=10

    (a) Define decoder.

    (b) Define encoder.

    (c) Name the maskable interrupts in 8085 microprocessor.

    (d) Compare carry and auxiliary carry flag of 8085 microprocessor.

    (e) Define the use of HL register pair.

[Turn over

2. (a) Write the addressing modes of 8086 microprocessor and explain them.

   (b) Write the name of two instructions for each category of 1-byte, 2-byte and 3-byte ?

   4+11=15

3. (a) Compare the following : 2×3=6

   (i) MOV and MVI.

   (ii) MAR and MDR.

   (iii) Data Bus and Address Bus of 8085.

   (b) Explain the memory read operation with diagram for 8085 microprocessor. 5

   (c) Explain about relays. 4

4. (a) Draw the bus architecture for 8085 microprocessor and explain it. 7

   (b) Draw timing diagram for a memory write operation and explain it. 8

5. (a) Illustrate the programmable interrupt controller 8259 with diagram. 9

(b) Explain both the memory interfacing concept – memory mapped I/O and peripheral I/O. 3+3=6

6. Define the assembly language statements stating the information : 5×3=15

(i) Number of byte

(ii) Number of machine cycle

(iii) Number of T-state for each

(a) JNZ (b) ADI (c) LDA (d) CMA (e) CMP

7. (a) Write an assembly language program to add two numbers stored in memory locations 2550H and 2570H and store the result in the memory address 3000H. 8

(b) Explain the programmable interval timer (8253). 7

8. Write short notes on any *three* : 3×5=15

(a) DMA controller

(b) 7–segment LED display

(c) Stepper motor

(d) Programmable Peripheral Interface (8255).