

(3 Hours)

[Total Marks: 80]

- N.B.: (1) Question No. 1 is **Compulsory**.
(2) Attempt any **three** questions out of the remaining **five**.
(3) Each question carries 20 marks and sub-question carry equal marks.
(4) Assume suitable data if required.

Q.1 Answer **any four**:

[20 M]

- a) Explain physical and logical address in 8086 processor.
- b) Write an assembly language program using 8051 to swap two numbers.
- c) Draw the Architecture of 8086.
- d) Explain Memory organization of 8051 microcontroller.
- e) Compare minimum mode and maximum mode of the 8086.

Q.2 a) List features of 8086 microprocessor and explain pipelining in detail.

[10 M]

b) Explain operating modes of 8255 PPI.

[10 M]

Q.3 a) Explain addressing modes of 8051.

[10 M]

b) Explains string instructions of 8086 with examples.

[10 M]

Q. 4 a) Design 8086 microprocessor based system using minimum mode with following specifications: i) 8086 microprocessor working at 10 MHz.
ii) 128 KB EPROM using 32 KB chips iii) 64 KB SRAM using 16 KB Chip.

[10 M]

b) Write a 8086 assembly language program to find the number of positive and negative numbers among a series of 10 signed numbers.

[10 M]

Q. 5 a) Explain the block diagram of 8259 PIC.

[10 M]

b) Explain the timer modes of 8051.

[10 M]

Q. 6 Write short note on (Any 3)

[20 M]

- 1. 8284 clock generator
- 2. Interfacing of a DC motor to microcontroller.
- 3. Interrupts of 8086.
- 4. Interfacing of keyboard to 8051
