

Time : 3 Hours

Total Marks : 80

Note:

1. Question number one is compulsory
2. Solve any 3 out of remaining five
3. Figures to the right indicates full marks

- Q.1** Answer (any four). [20]
- a) Explain hardware and software interrupts of 8086.
 - b) Compare Microprocessor and Microcontroller.
 - c) Explain port structure of the 8051 microcontroller.
 - d) Explain physical address generation process in 8086. Calculate physical address by taking suitable DS, CS and IP.
 - e) Explain the TCON register of 8051 microcontroller.
- Q.2** a) Explain maximum mode of 8086 microprocessor with timing diagram [10]
b) Explains addressing modes of 8086 microprocessor. [10]
- Q.3** a) Write an assembly language to generate a square on P1.0 of 1KHz frequency and 50% duty cycle using 8051 microcontroller. [10]
b) Explain various operating modes of 8255 PPI. [10]
- Q.4** a) Write an assembly language program to arrange the 10 numbers in descending order using 8086 microprocessor. [10]
b) Design 8086 microprocessor-based system using minimum mode with the following specifications:
i) 8086 microprocessors working at 8 MHz
ii) 16KB EPROM
iii) 64KB SRAM using 16KB chip. [10]
- Q.5** a) Explain different operating modes of 8259 PIC. [10]
b) Explain the internal RAM organization of the 8051. Highlight the importance of the register banks. [10]
- Q.6** Write short note on (Any 2) [20]
1. 8284 clock generators.
 2. Interfacing of a stepper motor to 8051 microcontroller.
 3. Interrupt structure of 8051 microcontroller.
