

- N.B. :- (1) Question No. 1 is Compulsory.
 (2) Solve any four out of remaining six questions.
 (3) Figures to the right indicate full marks.

1. Design an 8086 based microcomputer system with the following specifications. 20
 - (a) 8086 CPU working at 4.77 MHz
 - (b) 8087 Co-Processor for numeric computation.
 - (c) 32 KB of SRAM using 8 KB devices.
 - (d) 64 KB of EPROM using 16 KB devices.
2. (a) Explain the bus architecture block diagram of 8086 family microprocessors. 10
 (b) Explain 8086 maximum mode of operation in detail. 10
3. (a) Explain different operating modes of 8255. Give locus on strobed input-output mode. 10
 (b) Write a subroutine for 8085 to generate a delay of 10 ms. 10
4. (a) Explain the interrupt structure of 8085 microprocessor. 10
 (b) Draw and explain timing diagram for MVI A, 32H (8085 microprocessor) 10
5. Write short note on :- 20
 - (i) ICWs and OCWs of PIC 8259.
 - (ii) Co-Processor 8087.
6. (a) Write an assembly language program to add ten, 8 bit numbers stored from the memory locations F 000 H. The result of the addition is 16 bit and it is to be stored in register pair DE. Draw the flowchart for above program. 10
 (b) Explain different operating modes of 8086. 10
7. (a) Explain following 8086 instructions. 10
 - (i) AAA (ii) SHL (iii) JCXZ (iv) CLC (v) MOVS.
- (b) Write a program which will insert data segment stored in string 1 in ascending order in string 2. Also update the length of string 2. Use 8086 instructions. 10