

8/12/2011

SE IT IV (Rev)
MPMC

Con. 6293-11.

MP-4414

(3 Hours)

[Total Marks : 100

- N.B.** (1) Question No. 1 is **compulsory**.
 (2) Attempt any **four** questions out of the remaining **six** questions.
 (3) Assume **suitable** data if **necessary** and state the assumptions **clearly**.
 (4) **Figures** to the **right** indicate **full** marks.

1. Design a 8086 based system with the following specifications :— 20
 - (a) 8086 processor working at 8 MHz
 - (b) 64 KB RAM using 62256 chips
 - (c) 64 KB EPROM using 27256 chips
 - (d) Two 16-bit input and output ports in handshake mode.

Draw for the above specifications :—

 - (i) Memory map and I/O map
 - (ii) The necessary interfacing diagram
 - (iii) Explain the concept of using absolute decoding
 - (iv) Explain the design.

2. (a) 8086 microprocessor is running at a frequency of 5 MHz. Write an 8086 assembly Language Program to generate a square wave of 1 KHz at one of the bit of output port. Explain the logic of the program also via flow chart and also show the delay calculations. 10
- (b) Explain the hardware and software interrupts of 8051 microcontroller in detail. 10

3. (a) Explain the various parameter passing techniques to a procedure with examples. 10
- (b) Explain the logic behind generating a 100 msec delay, assuming the system frequency to be 10 MHz and hence write a program (assembly language) for the same. 10

4. (a) Explain the TIMER/COUNTERS of IC 8051. 10
- (b) Interface 8051 and 8255 PPI. Explain the interfacing diagram and hence explain the port structure of 8051. 10

5. (a) Write an Assembly Language program to generate a sine wave and hence interface an 8 bit DAC with 8051 microcontroller and explain the same. 10
- (b) State and explain the various addressing modes in 8051 with examples and compare the same with the addressing modes of 8086. 10

6. (a) Explain jump and CALL instruction of 8051 microcontroller with examples. Also explain the difference between intersegment and intrasegment calls with examples. 10
- (b) Differentiate between Procedure and Macros. Write and explain an 8086 program to reverse the user entered string using macros. 10

7. Write short notes on any **four** :— 20
 - (a) Minimum and maximum mode of 8086
 - (b) Assembles directives
 - (c) Logical and physical address of 8086 with example
 - (d) Serial communication of 8051
 - (e) 8051 register banks.