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B. Tech 6th Semester Examination

Advanced Microprocessors & Microcontrollers

EC(ID)-6003

Time : 3 Hours   **Max. Marks : 100**

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Candidates are required to attempt five questions in all selecting one question from each of the section A, B, C & D of the question paper and all the subparts of the questions in Section E.

SECTION - A

1. (a) Draw 'Read' and 'Write' cycle timing diagram of 8086.

(10)

(b) Explain the various type of interrupt of 8086 and classify them on the basis of highest and lowest priority.   (10)

2. Draw and explain the Pin Diagram of 8086.   (20)

SECTION - B

3. Write a program to:

(a) Clear the accumulator

(b) Add 47H to accumulator

(c) Subtract-92H from accumulator   (20)

4. Write a program in assembly language to sum a series of 16 bit numbers using SI registers of 8086 microprocessor. (20)

SECTION - C

5. (a) Compare the features of the 80386 with those of the 80286 from the subsequent point of view: registers, clock rate, number of pins, number of instructions, modes of operation, memory management and protection mechanism. (10)

   (b) Justify how 80486 is better than 80386 on the basis of various parameters? (10)

6. Describe the architecture of 80286 with a neat and suitable diagram. (20)

SECTION - D

7. What do you understand by Memory - Mapped I/O and peripheral I/O? (20)

8. Describe the counters and timers in the 8051 micro controller by taking one suitable application. (20)

SECTION - E

9. Each question carry 2 marks each:

   (a) What are the predefined interrupts in 8086?

   (b) Explain the process control instructions.

   (c) What is the purpose of segment registers in 8086?

   (d) How single stepping can be done in 8086?

(e) What are the functions of bus interface unit (BIU) in 8086?

(f) What is the purpose of segment registers in 8086?

(g) What are the pins used for interfacing 80286 to a co-processor?

(h) How many bits are needed for the address in real and protected modes?

(i) What is the meaning of 8-bit micro-controller in 8051 ?

(j) What is the need of micro-controller as we already have microprocessors in the market?