10893

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 0210   Roll No.

B.Tech.

(SEM IV) EVEN SEMESTER THEORY EXAMINATION, 2009-2010

MICROPROCESSORS

Time : 3 Hours   Total Marks : 100

Note : *Attempt ALL questions.*

1. Attempt **any four** parts of the following :   (4x5=20)

    (a) What do you understand by Memory-Mapped I/O and Peripheral I/O ?

    (b) Describe the opcode fetch machine cycle with suitable timing diagram for 8-bit processor.

    (c) What do you understand by multiplexing of address and data buses ?

    (d) Differentiate between hardware and software interrupts.

    (e) Explain the use of Stack Pointer (SP) during PUSH and POP operation.

    (f) What do you understand by Pipelining ?

2. Attempt **any four** parts of the following : (4x5=20)

(a) Describe internal architecture of 8085 Processor.

(b) Give the clock out frequency and state time, T of 8085 operating with each of the following frequency crystals : 6.25 MHz, 6.144 MHz, 5 MHz and 10 MHz.

(c) Explain different control signals used by 8085.

(d) Define instruction cycle, machine cycle and T–State.

(e) Explain how 8085 responds to INTR interrupt.

(f) Explain the function of following instructions :

(i) RIM

(ii) RST 4

(iii) ADD M

(iv) IN 20H

(v) DAA

3. Attempt **any two** parts of the following : (2x10=20)

(a) Draw internal architecture of 8086 and explain each component.

(b) Draw and discuss fully buffered circuit diagram of 8086 operated in maximum mode.

(c) Define bus cycle, and explain the minimum mode read and write bus cycle with proper timing diagram.

4. Attempt **any two** parts of the following : (2x10=20)

(a) Explain how memory is allocated for mother board and user program ?

(b) Write a program to multiply the contents of AX by 6 using shift instruction.

(c) Draw and discuss the internal architecture of 8253.

5. Attempt **any two** parts of the following : (2x10=20)

(a) Discuss various modes of operation of 8259 Interrupt Controller.

(b) What do you understand by DMA ? Discuss the internal block diagram of 8237A.

(c) Draw and discuss the various modes of operation of 8255.

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