Microprocessor and Assembly language programming
(CSE-208, Dec-2007)

Note: Section A is compulsory. Attempt any four questions from Section-B and any two from Section-C.

Section-A

1. a) Write advantage of the assembly language in comparison with high level language.
   b) Draw diagram of a memory chip with eight registers.
   c) Write down the communication steps with I/O devices which are similar to those in communicating with memory.
   d) If the memory chip size is 256 x 1 bits, how many chips are required to make 1 K byte of memory?
   e) Draw the timing diagram of the memory read cycle.
   f) Explain the function of the system controller in 8085.
   g) List the four categories of 8085 instructions that manipulate data.
   h) Give the sum & the flag setting for AF, SF, ZF, CF, OF & PF after hexadecimally adding 4AE0 to each of the following.
   i) Write the principle used in interfacing a matrix keyboard seven segment led display
   j) Write note on 8051 chip.

Section-B

2. Explain all four operations performed by MPU using diagram.
3. The instruction code 0100 1111(4FH) is stored in memory location 2005H. Illustrate the data flow and list of sequence of events when the instruction code is fetched by MPU.
4. Using diagram explain how many address lines are used to identify an I/O port in the peripheral I/O and in the memory –mapped I/O method.
5. How does 8085 based single board microcomputer works?
6. Draw a schematic to demultiplex bus AD_7 –AD_0 using any octal latch.

Section-C

7. Draw the 8085 timing of execution of the 2 byte instruction MVI A,32H(load the accumulator with the data 32 H) and store in location as follows

Memory location	Machine Code	Mnemonics
2000	3E	MVI A, 32H

8. (a) Write the machine code for the instruction MOV H, A if the opcode=01, the register code for H+100_2 and register code for A= 111.
   (b) Explain why the PTR attribute operator is sometimes necessary in 8086.
9. (a) Write instruction to clear the CY flag, to load number FFH in register C, and to add 01 to (C), if the CY flag is set; display 01 at an output port otherwise display the content of register C.
   (b) Explain how traffic light system works using stepper motor interface.