BT-4/M-24   44184

MICROPROCESSOR INTERFACING AND APPLICATION
PC-IT-208A

Time : Three Hours]   [Maximum Marks : 75

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. (a) Discuss the programming model of 8085 microprocessor with the help of suitable diagram. 8

   (b) Draw the timing diagram of a memory read bus cycle. Suppose the READY signal becomes low at the middle of second T state. Draw the timing diagram for the modified memory read bus cycle. 7

2. (a) Describe, how timing and control signals are generated in 8085 microprocessor. 7

   (b) Explain the requirement of a program counter, stack pointer and status flags in the architecture of 8085 microprocessor. 8

Unit II

3. (a) Write a program in 8085 to arrange the five numbers in ascending order. Assume numbers are available from 9000h to 9004h. 8

   (b) Explain the working of rotate instructions of 8085 with proper example in each case. 7

4. (a) Explain the instruction and data formats of 8085 microprocessor. 7

   (b) Explain the Branch, Stack and I/O instructions of 8085 microprocessor with an example. 8

Unit III

5. (a) State the difference between the vectored and non-vectored interrupts. Explain vectored interrupts of the 8085 microprocessor. 6

   (b) Design a memory interfacing circuit for a given 4K ROM chip. Use all 16 address lines. Use any combination of inverter, NAND gate and 74LS138 decoder to generate the address. Determine the memory map (Address range) of the design. 9

6. (a) Differentiate between the hardware and software interrupts. How many such interrupts are available in 8085 microprocessor ? 7

(b) Draw the diagram for interfacing 8KB of ROM and 8KB of RAM with microprocessor 8085 and also explain the number of pins used for such interfacing. The starting address for ROM should be 0000H and starting address for RAM should be 8000H. 8

Unit IV

7. (a) Sketch and explain the interface of PPI 8255 to the 8085 microprocessor in minimum mode. 7

   (b) What is DMA ? Which hardware pins are used for DMA control ? Draw and explain the architecture of 8237 DMA controller. 8

8. (a) What is the advantage of using 8279 for keyboard/display interface ? Explain major components of 8279 with the aid of suitable diagram. 9

   (b) List instruction command codes for programming an LCD. 6