5E5035

Roll No.

[Total No. of Pages : 2

5E5035

B.Tech. V Semester (Main/Back) Examination, Nov./Dec. - 2017
Electronic Instrumentation & Control Engg.
5EI5A Microprocessors

Time : 3 Hours

Maximum Marks : 80
Min. Passing Marks : 26

Instructions to Candidates :

*Attempt any **five questions**, selecting **one question** from **each unit**. All Questions carry **equal** marks. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitable be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.*

Unit - I

1. a) i) Explain the programming model of 8085. **(4)**

   ii) Explain the following instruction of 8085. **(4)**

   1) RIM 2) SIM 3) EI 4) DI

   b) Write a program to multiply two 8 bit numbers. **(8)**

OR

1. Design 8085 based system with following specifications **(16)**

   i) System frequency 3 MHz.

   ii) Interface 16kb EPROM using 8 kb chip.

   iii) Interface 32 kb RAM using 16 kb chip.

   iv) One 8255 in memory mapped I/O.

Unit - II

2. a) Explain the evolution of microprocessors and list the sequence of events that occurs when the 8085 microprocessor reads from memory. **(8)**

   b) Write a 8085 program that enables the RST 7.5 and RST 5.5 inputs. **(8)**

OR

2. a) Explain the functions of various control and status signals available on 8085 microprocessor. **(8)**

   b) What is stack and subroutine? State the necessity of these in 8085 microprocessor based system. Give instructions related to stock and subroutine. **(8)**

Unit - III

3. a) Compare Hardware Interrupt and software interrupt. Explain Interrupt structure of 8085 microprocessor. (8)

b) Write short note on: (8)

i) 8254, programmable interrupt timer

ii) 8259, programmable interrupt controller

OR

3. a) Explain the difference between (10)

i) Action of HLT and HOLD

ii) A software interrupt and hardware interrupt

iii) Action of 'RESET' and 'JMP 0000'

iv) Instruction cycle, and machine cycle

v) Arithmetic shift and logical shift

b) Show which interrupt will be masked it the following instructions are executed MVI A, 10 H SIM. (6)

Unit - IV

4. a) Draw the block diagram of 8257 DMA and explain its operation. (8)

b) Interface one 7 segment display and 8 keys to 8085 microprocessor through 8255. Write a program of flowchart to display key number which is pressed. (8)

OR

4. a) Draw block diagram of 8259 and explain its operation. (8)

b) Any number of (2 K × 8) ROM is available. Design and interface to 8085 microprocessor to generate (8 K × 8) memory. Assume the starting address to be 8000H. (8)

Unit - V

5. a) Discuss the addressing modes available on 8086 for accessing data and instruction Hence find the physical address of the top of the stack when stack segment register and stack pointer register contain 3000H and 8434H. (8)

b) What are various register used in 8086 microprocessor. (8)

OR

5. a) Draw the pin diagram of 8086 microprocessor and explain its various parts. (8)

b) Explain the following instructions in 8086 with suitable example. (8)

i) PUSH

ii) PUSHF

iii) SAHF

iv) CMPS

◆◆◆◆