Unit - V

5. (a) 80386 microprocessor is highly pipelined as compared with 8086 microprocessor. Justify. 2

(b) Discuss the architecture of 80386 and explain the function of each unit. 7

(c) Differentiate between real mode, virtual mode and protected mode of 8086. 7

(d) What do you mean by descriptor table ? Discuss different descriptor types supported by 80386. 7

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328555(28)

BE (5th Semester)
Examination, Nov.-Dec., 2015

(New Scheme) ETC

Advanced Microprocessor and Interfacing

CSVTUonline.com

Time Allowed : 3 hours   Maximum Marks : 80
Minimum Pass Marks : 28

Note : (i) Part (a) of each question is compulsory. Attempt any two parts from (b), (c) and (d).

(ii) The figures in the right-hand margin indicate marks.

Unit - I

1. (a) Draw and label Flag Register Organization of Intel 8086. 2

(b) Explain the pipelined architecture of 8086 with block diagram. How is it implemented in 8086? 7

(c) Explain the concept of segmented memory. What are its advantages? 7

(d) Draw and discuss read and write timing diagram with one wait state of 8086 in minimum mode. 7

Unit - II

2. (a) Why 8086 microprocessor is not having any opcode fetch cycle ? 2

(b) Explain the interrupt structure of 8086 in detail with interrupt vector table. Also calculate the interrupt vector address of the following interrupt : 7

   (i) INT 0H

   (ii) INT 20H

(c) What are the different addressing modes supported by 8086? Give one example for each of them. 7.

(d) Write a program to find out the number of even and odd numbers from a series of 16-bit hexadecimal numbers. Assume any 10 hexadecimal numbers. 7

Unit - III

3. (a) What is the main difference between 8259 and 8259A ? 2

(b) Interface two 4K×8 EPROMs and two 4K×8 RAM chips with 8086 and select suitable maps. The address ranges are defined

   EPROM → FE0OO H – FFFFF H
   RAM   → FC0OO H – FDFFF H 7

(c) Design a programmable times using 8254 and 8086. Interface 8254 at an address 0040 H for counter 0 and write an ALP to

generate a square wave of period 1 ms. The 8086 and 8254 run at 6 MHz and 1.5 MHz respectively. 7

(d) Explain the initialization sequence of 8259 A. 7

Unit - IV

4. (a) Why are converters used ? Write application of ADC and ADC. 2

(b) Explain Stepper Motor Interfacing. 7

(c) Interface ADC 0808 with 8086 using 8255 ports. Use port A of 8255 for transferring digital data output of ADC to the CPU and port C for control signals. Assume that an analog input is present at I/P_2 of the ADC and a clock input of suitable frequency is available for ADC. Write required ALD and draw schematic diagram. 7

(d) Explain the following terms in relation to 8279 : 7

   (i) Two-Key Lock Out

   (ii) N-Key Roll Over

   (iii) Right Entry

   (iv) Left Entry