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06CS45

Fourth Semester B.E. Degree Examination, Dec. 2013/Jan. 2014
Microprocessor

Time: 3 hrs. Max. Marks:100

Note: ***Answer FIVE full questions, selecting atleast TWO questions from each part.***

PART – A

1 a. Draw the block diagram of 8086 micro – processor and list out its various features. **(10 Marks)**

b. What are addressing modes? Explain any three addressing modes. **(06 Marks)**

c. i) If a data segment register contain 4000H what physical address will the instruction MOV AL, [234BH] reads.

ii) If the 8086 DS register contain 7000H. Write the instruction that will copy the content of DL to address 74B2CH. **(04 Marks)**

2 a. Explain any five move instruction coding formats, with examples for each. **(10 Marks)**

b. Construct the binary code for 8086 following instruction. Express the result in Hexa – decimal notation. i)MOV BL, AL ii) MOV DS, AX iii) IN AL, 05H iv) ADD AL, 07H v) MOV CS : [BX], DL. **(10 Marks)**

3 a. Write an ALP to sort five 16 – bit number stored in an array in ascending order using bubble sort algorithm. **(10 Marks)**

b. Explain the following jump instruction of 8086. Give the format for each : i) JA/JNBE ii) JAE/JNB iii) JG/ JNLE iv) JMP v) JNC vi) JNE/JNZ. **(06 Marks)**

c. Write a delay procedure for producing a delay of 1 sec for 8086 microprocessor working at 10 MHz. **(04 Marks)**

4 a. What are macros? Explain the various types of 8086 macros with an *example for* each. **(10 Marks)**

b. Explain the 8086 CALL and RET instruction. **(06 Marks)**

c. Write an 8086 procedure to add two 16 – bit number. **(04 Marks)**

PART – B

5 a. Write an ALP to read a string check whether it is a palindrome or not. Display the appropriate message on the monitor **(10 Marks)**

b. What are assembler directive? Explain the following assembler directive, with example for each : i) ASSUME ii) DB, DD AND DQ iii) SEGMENT and ENDS iv) PROC and ENDP v) PUBLIC. **(10 Marks)**

6 a. With a timing diagram, explain 8086 BUS – activity during a write operation. **(10 Marks)**

b. INTERFACE 8K ROM using 2732 chips and 4 K RAM using 6116 chip to 8086 assuming starting address for ROM as 40,000H and for RAM at is 44,000H. **(10 Marks)**

7 a. Explain with block diagram, the working of 8259 – A priority interrupt controller. **(10 Marks)**

b. What is an interrupt? Explain the various types of 8086 interrupt. **(10 Marks)**

8 a. Explain 8255 internal block datagram. Explain its various operational modes. **(10 Marks)**

b. Interface DAC to 8086 micro-processor write an ALP to generate a square waveform using DAC. **(10 Marks)**

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.