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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)