

## Sixth Semester B.E. Degree Examination, Dec.2014/Jan.2015

**Microprocessors**

Time: 3 hrs.

Max. Marks: 100

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

**PART – A**

1. a. With neat sketch explain execution unit of 8086. (06 Marks)  
 b. Define addressing modes for specifying branch address and identify addressing modes of following instructions:  
 i) MOV [BP + SI + 5], AH                      ii) MOV AL, [5036] (06 Marks)  
 c. Explain various machine language instruction formats used in 8086 with suitable examples. (08 Marks)
2. a. Explain the functions of following instructions with examples:  
 i) LEA                      ii) IDIV                      iii) DAA                      iv) JNGE (08 Marks)  
 b. Write an assembly level language program to add two 16-digit packed BCD numbers. (06 Marks)  
 c. Explain the following directives and operators with suitable examples:  
 i) SEGMENT                      ii) ASSUME                      iii) DUP                      iv) SIZE (06 Marks)
3. a. Explain the following string instructions with examples:  
 i) MOVS B                      ii) CMPS B                      iii) SCAS B                      iv) Repeat prefix (REP) (08 Marks)  
 b. Write an Assembly level language program to convert four digit ASCII coded hexadecimal number to binary equivalent using string instructions. (06 Marks)  
 c. Write a recursive procedure to calculate the factorial of N. (06 Marks)
4. a. Give the classifications of interrupts in 8086. Explain the 8086 interrupt response mechanism. (04 Marks)  
 b. Explain INT N interrupt instruction? Write a program that outputs characters to printer using INT 17H interrupt. (08 Marks)  
 c. Explain interrupt data input using suitable circuit diagram. Write interrupt service procedure for reading characters from ASCII keyboard. (08 Marks)

**PART – B**

5. a. Write a keyboard procedure that scans the keyboard and returns with numeric code of the key in AL. (10 Marks)  
 b. Interface eight seven segment display, using 8255 with 8086. (10 Marks)
6. a. Explain data types of numeric data processor 8087. (10 Marks)  
 b. Represent  $11.375_{10}$  in short real form. (04 Marks)  
 c. Explain functions of following instructions:  
 i) FLD                      ii) FADD                      iii) F2XM1                      iv) FLDL2E (06 Marks)

- 7 a. Explain minimum mode configuration of 8086. (08 Marks) \*
- b. Explain following with respect to PCI bus
- i) PCI bus timing diagram ii) PCI bus commands. (08 Marks) \*
- c. Explain types of packets and contents found on USB. (04 Marks)
- 8 a. Give the features of 80386 microprocessor. Explain its memory system and I/O system with suitable diagrams. (08 Marks) \*
- b. Explain programming model of 80486 microprocessor with suitable diagrams. (08 Marks)
- c. Explain basic features of Pentium processor. (04 Marks) \*

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