USN ☐☐☐☐☐☐☐☐☐☐

06CS52

Fifth Semester B.E. Degree Examination, June/July 2011
System Software

Time: 3 hrs.   Max. Marks:100

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

PART – A

1 a. Differentiate between system software and application software. (04 Marks)
   b. Explain the following with reference to SIC/XE machine architecture :
      i)   Instruction formats
      ii) Addressing modes
      iii) Data formats
      iv) Register organization. (10 Marks)
   c. Write an ALP in SIC/XE to add 2 arrays of 100 integers. (06 Marks)

2 a. Explain the different data structures used in designing SIC assembler. (08 Marks)
   b. Discuss pass 1 algorithm of 2 pass assembler. (10 Marks)
   c. What are assembler directives? Give examples. (02 Marks)

3 a. Differentiate between program blocks and control sections. Explain how control sections are processed. (10 Marks)
   b. Differentiate between literal and immediate operand with example. (04 Marks)
   c. Discuss different design options of assembler. (06 Marks)

4 a. What is a loader? List the functions of a loader. Develop an algorithm for a bootstrap loader. (10 Marks)
   b. What is dynamic loading? What are its advantages and disadvantages? Explain with a neat diagram loading and calling of a subroutine using dynamic linking. (10 Marks)

PART – B

5 a. Explain the structure of a text editor. (10 Marks)
   b. Describe interactive debugging system. (10 Marks)

6 a. Explain various data structures required for the design of a macro processor with an example. (10 Marks)
   b. Explain any three m/c independent macro processor features. (10 Marks)

7 a. Explain the structure of LEX specification with example. (10 Marks)
   b. Discuss how lexer and parser communicate. (10 Marks)

8 a. Write YACC specification to recognize nested If control statements and display the number of levels of nesting. (10 Marks)
   b. Differentiate between lex and yacc. (05 Marks)
   c. Define the following terms with examples :
      i)   Non – terminals.
      ii) y.tab.h
      iii) Symbol table
      iv) Pattern
      v)   Lexical analysis. (05 Marks)

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