USN ☐☐☐☐☐☐☐☐☐☐

NEW SCHEME

Fifth Semester B.E. Degree Examination, July 2006
CS / IS
System Software

Time: 3 hrs.]   [Max. Marks:100

Note: *1. Answer any FIVE questions.*

1 a. Briefly explain architecture – resisters, instruction format, status word and addressing mode of SIC machine.   (10 Marks)
   b. Explain the following for Pentium pro architecture :
      i) Memory ii) Data formats iii) Instruction formats.   (06 Marks)
   c. Explain any 4 assembler directives of SIC/XE with examples.   (04 Marks)

2 a. Write an SIC/XE assembly language program to perform addition of two arrays of 100 words starting at locations ARRAYA and ARRAYB and store the resulting array at location ARRAYC.   (08 Marks)
   b. Explain various addressing modes used in SIC/XE machine with examples.
                                                                          (07 Marks)
   c. Briefly explain program relocation advantages and disadvantages.   (05 Marks)

3 a. Write algorithm of Pass2 of two-pass assembler.   (10 Marks)
   b. Give the difference between program blocks and control sections and explain in detail processing of control sections.   (10 Marks)

4 a. Explain the functions of loader. Also write an SIC/XE assembly language program for bootstrap loader.   (08 Marks)
   b. Explain various data structures used for a linking loader.   (07 Marks)
   c. With examples explain any 5 loader options.   (05 Marks)

5 a. With a neat block diagram explain working of text editor.   (10 Marks)
   b. Explain the functions and capabilities of debugging.   (10 Marks)

6 a. Define macro. Write algorithm for one pass macroprocessor and explain.
                                                                          (10 Marks)
   b. Explain the following with examples.
      i)   Concatenation of macro parameters.
      ii) Generation of unique labels.   (10 Marks)

7 a. Define parsing and explain with examples various problems that are encountered in recursive descent parsing.   (06 Marks)
   b. With examples explain any two machine independent optimization techniques.   (08 Marks)
   c. Write code generation routine for Pascal READ statement.   (06 Marks)

8 a. Briefly explain P-code compilers with a neat block diagram.   (06 Marks)
   b. Explain Parser-Lexer communication.   (05 Marks)
   c. Describe the YACC specification file.   (09 Marks)

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