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<b>NEW SCHEME</b>
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**Fifth Semester B.E. Degree Examination, July 2007**

**CS / IS**

**System Software**

Time: 3 hrs.]

[Max. Marks:100

**Note : Answer any FIVE full questions.**

- 1
  - a. Explain all the addressing modes supported by SIC/XE by indicating the different bit settings in an instruction. (08 Marks)
  - b. With reference to the VAX architecture, explain the following:
    - i) Memory ii) Registers iii) data formats. (06 Marks)
  - c. Suppose a RECORD contains 100 byte record, write a subroutine for SIC/XE that will write this record into the output device 05. (06 Marks)
  
- 2
  - a. Write an algorithm for a two pass SIC assembler. (12 Marks)
  - b. What is the difference between literal and immediate operand. How does the assembler handle the literal operands? (04 Marks)
  - c. Explain the following assembler directives with example each:
    - i) EQU ii) BASE iii) START iv) RESB. (04 Marks)
  
- 3
  - a. Explain how relocation is implemented by relocating loader. (06 Marks)
  - b. Explain the algorithm for a linking loader. (10 Marks)
  - c. What is the difference between linkage editor and linking loader? (04 Marks)
  
- 4
  - a. Explain the various data structures used in the implementation of one pass macro-processor. (10 Marks)
  - b. What is conditional macro expansion and how it is implemented? (10 Marks)
  
- 5
  - a. Write recursive-parsing algorithm for assignment statement. (12 Marks)
  - b. Discuss the different possibilities for performing machine dependent code optimization. (08 Marks)
  
- 6
  - a. Explain the issues involved in compiling block-structured languages. (10 Marks)
  - b. Explain the structure of text editor. (10 Marks)
  
- 7
  - a. Discuss some of the ways of performing storage allocation for a compiled program. (10 Marks)
  - b. Explain briefly the debugging functions. (06 Marks)
  - c. Explain the structure of a lex program. (04 Marks)
  
- 8
 

Write short notes on the following:

a. Multi-pass assemblers	b. SPARC assemblers
c. Recursive macro expansion	d. Bootstrap loader.

(20 Marks)