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10MCA31

Third Semester MCA Degree Examination, December 2012
System Software

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions.

- 1 a. Compare system software and application software. Give examples for each. (04 Marks)
b. Explain the architecture of SIC/XE. (12 Marks)
c. Write a program for demonstrating looping and indexing operations for SIC/XE. (04 Marks)
- 2 a. Explain the following with an example for each
i) START ii) BYTE iii) RESW iv) JSUB. (08 Marks)
b. Write the algorithm for pass 1 and pass 2 and pass 2 assembler. (12 Marks)
- 3 a. Explain the following, with an examples for each
i) Program block ii) Control section. (08 Marks)
b. Explain the following records, with respect to SIC/XE
i) Define record ii) Refer record iii) Modification record iv) Text record. (12 Marks)
- 4 a. What are the basic functions of a loader? (03 Marks)
b. What is relocation? Explain. (03 Marks)
c. Discuss the data structure used by a linking loader. (04 Marks)
d. Write algorithm for pass 1 and pass 2 of a linking loader. (10 Marks)
- 5 a. Explain one – pass assembler. (10 Marks)
b. With a neat diagram, explain the structure of an editor. (10 Marks)
- 6 a. What are the differences between a macro and a subroutine? (04 Marks)
b. Discuss the data structures used by a macro processor. (06 Marks)
c. Explain the following :
i) Concatenation of macro parameters
ii) Generation of unique labels. (10 Marks)
- 7 a. Explain the structure of Lex and Yacc. (06 Marks)
b. Write a Lex program to identify
i) Number of positive integers
ii) Number of negative integers
iii) Number of positive fractions. (06 Marks)
c. Write a Yacc program to implement a basic calculator involving +, -, * and / operation. (08 Marks)
- 8 Write short notes on :
a. MASM – Assembler
b. MS – DOS linker
c. Interactive debugging systems
d. Shift - reduce parsing. (20 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.