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Second Semester MCA Degree Examination, June/July 2017
System Software

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions.

- 1 a. Define system software. Differentiate between system software and application software. (05 Marks)
 b. Explain SIC/XE machine architecture. (10 Marks)
 c. Write sequence of instructions for SIC/XE to copy "system software" from str1 to str2 using indexing and looping operations. (05 Marks)
- 2 a. Write an algorithm for pass-2 of assembler. (10 Marks)
 b. Explain the program block in detail. (05 Marks)
 c. Explain the working of multipass assembler. (05 Marks)
- 3 a. What are the basic functions of a loader? (04 Marks)
 b. Explain the working of the algorithm of an absolute loader and give an example of an absolute loader. (06 Marks)
 c. Write an algorithm for pass 1 and pass 2 of a linking loader. (10 Marks)
- 4 a. Explain the following loader design options:
 i) Linkage editor
 ii) Dynamic linking (10 Marks)
 b. Write in brief:
 i) MS-DOS-linker
 ii) Automatic library search (10 Marks)
- 5 a. With a neat diagram, explain the structure of an editor. (10 Marks)
 b. Explain the debugging functions and capabilities of an interactive debugging system. (10 Marks)
- 6 a. Explain macro definition and expansion. (04 Marks)
 b. Explain macro processor algorithm and data structures. (10 Marks)
 c. Explain the following:
 i) Concatenation of macro-parameters
 ii) Keyword macro parameters (06 Marks)
- 7 a. Explain the following:
 i) Recursive macro expansion
 ii) General purpose macro processors (10 Marks)
 b. Explain the following:
 i) MASM macro processor
 ii) General purpose macro processors (10 Marks)
- 8 a. Explain the following:
 i) Grammars
 ii) Lexical analysis
 iii) Syntactic analysis
 iv) Code generation (10 Marks)
 b. Write a note on the following:
 i) Division into passes
 ii) Compiler-compiler (10 Marks)

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