

CBCS Scheme

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16/17MCA25

Second Semester MCA Degree Examination, June/July 2018 System Software

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing one full question from each module.

Module-1

- 1 a. What is system software? Differentiate it from application software. (06 Marks)
b. Describe the following with respect to SIC/XE machine:
i) Data format ii) Addressing modes iii) Instruction format. (10 Marks)

OR

- 2 a. What are the fundamental functions of any assembler? With an example, explain any four assembler directives. (10 Marks)
b. Explain the data structures used in assembler algorithms. (06 Marks)

Module-2

- 3 a. Compare a two-pass assembler with a one pass assembler. How forward references are handled in one-pass assemblers? (10 Marks)
b. Write a note on MASM assembler. (06 Marks)

OR

- 4 a. Distinguish between literal and immediate operands. How does the assembler handle the literal operand? (06 Marks)
b. Explain the concept of program relocation with the help of a neat figure. (10 Marks)

Module-3

- 5 a. Briefly explain the boot strap loader, with the algorithm. (10 Marks)
b. Explain dynamic linking with suitable diagrams. (06 Marks)

OR

- 6 a. Distinguish between linking loader and linkage editors. (06 Marks)
b. Explain the features of MS-DOS linker. (10 Marks)

Module-4

- 7 a. Write an algorithm for one-pass macro processor. (08 Marks)
b. Write a note on the following machine-independent features of macro processor:
i) Concatenation of macro parameters ii) Keyword macro parameters (08 Marks)

OR

- 8 a. What do you mean by a MACRO? Explain macro definition and expansion with suitable example. (08 Marks)
b. Explain the advantages and disadvantages of general purpose macro processors. (08 Marks)

Module-5

- 9 a. Describe how finite automata is used in recognizing the tokens of a typical programming language. (10 Marks)
b. Describe the process of compiler – compilers. (06 Marks)

OR

- 10 a. Explain the machine dependent code optimization of compiler with an example. (10 Marks)
b. What is a parse tree? Give an example. (06 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.