



CBCS SCHEME

16/17MCA25

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Second Semester MCA Degree Examination, June/July 2019 System Software

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- 1 a. Explain the architecture of SIC machine. (08 Marks)
b. Explain instruction formats and addressing modes of SIC/XE machine architecture with examples. (08 Marks)

OR

- 2 a. Write and explain the algorithm of Pass-1 of two pass assembler. (08 Marks)
b. Explain the various data structures used in the assemblers. (04 Marks)
c. Explain following assembler directives with examples: i) BYTE ii) LTORG. (04 Marks)

Module-2

- 3 a. What is program relocation? How the problem of relocation is addressed in assembler? (08 Marks)
b. Explain the following with examples:
i) Symbol defining statements.
ii) Expressions. (08 Marks)

OR

- 4 a. Briefly explain how forward references are handled in a one-pass assembler. (08 Marks)
b. Explain MASM assembler in detail. (08 Marks)

Module-3

- 5 a. Explain a simple bootstrap loader with a source program. (08 Marks)
b. Write and explain pass-2 algorithm of linking loader. (08 Marks)

OR

- 6 a. Briefly explain following:
i) Automatic Library Search
ii) Loader Options. (08 Marks)
b. Explain dynamic linking with neat diagrams. (08 Marks)

Module-4

- 7 a. What do you mean by a MACRO? Explain macro definition and expansion with suitable example. (08 Marks)
b. Write an algorithm for one-pass macro processor. (08 Marks)

OR

- 8 a. Explain the following with examples.
i) Generation of unique labels
ii) Concatenation of macro parameters. (08 Marks)
b. Discuss the general purpose macro processors and their advantages. (08 Marks)

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Module-5

- 9 a. Explain Recursive-Descent parsing with an example. (08 Marks)
b. Explain the code generation phase of compiler and write code generation routines for PASCAL READ statement. (08 Marks)

OR

- 10 a. Explain any three machine independent code optimization method with examples. (09 Marks)
b. Explain P-Code compilers. (07 Marks)
