

CBCS SCHEME

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16/17MCA25

Second Semester MCA Degree Examination, Aug./Sept.2020 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. Write sequence of instructions for SIC to clear a 20 byte string to all blank. (04 Marks)
b. Explain the data structures used in the design of an assembler with respect to pass 1 and pass 2. (06 Marks)
c. Explain following assembler directives with an example:
(i) END (ii) BASE (iii) BYTE (06 Marks)

OR

- 2 a. Write the algorithm for pass 2 of 2 pass assembler. (06 Marks)
b. Write a note on architecture of Ultra SPARC m/c. (06 Marks)
c. Write a sequence of instructions for SIC/XE to set NUM3 equal to NUM1 + NUM2 *5 and NUM5 equal to NUM4 + NUM3 -5. (04 Marks)

Module-2

- 3 a. Explain the following records with respect to SIC/XE.
(i) Define record (ii) Refer record
(iii) Modification record (iv) Text record (08 Marks)
b. Explain briefly literals and expressions. (08 Marks)

OR

- 4 a. Write an algorithm for one pass assembler. Give the structure of symbol table. (10 Marks)
b. What is relocation? Explain how it is solved by using modification record method. (06 Marks)

Module-3

- 5 a. Write algorithm for pass 1 and pass 2 of a linking loader. (10 Marks)
b. With a neat diagram explain working of linkage editor. (06 Marks)

OR

- 6 a. Write short notes on:
(i) Automatic library search (10 Marks)
(ii) SunOS Linker (06 Marks)
b. Explain the working of the algorithm of an absolute loader. (06 Marks)

Module-4

- 7 a. Illustrate the concept of recursive macro call with suitable example. (10 Marks)
b. Write a short note on ELENA macro processor. (06 Marks)

OR

- 8 a. Write an algorithm for one pass macro processor. (10 Marks)
b. Explain how labels are handled in macro processor. (06 Marks)

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.

Module-5

- 9 a. Explain compiler-compilers. (06 Marks)
 b. Write a note on interpreters. (04 Marks)
 c. Explain the concept of division into parser. (06 Marks)

OR

- 10 a. Explain Recursive Decent (RD) parser with example. (08 Marks)
 b. What is parse tree? Give example. (04 Marks)
 c. Using the given finite automation, check if the following string are recognized or not:
 (i) aaabbc (ii) abcccc (iii) abbcc (iv) abc

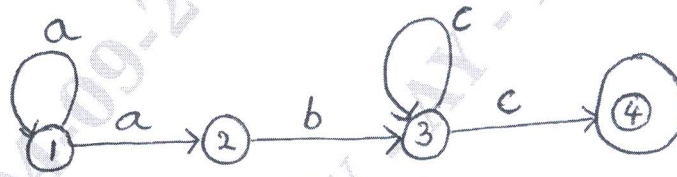


Fig.Q10(c)

(04 Marks)
