CBCS Scheme

USN | | | | | | | | | | |

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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