



# CBCS SCHEME

16/17MCA25

Second Semester MCA Degree Examination, Dec.2019/Jan.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. Define System Software, Bring out the differences between System Software and Application Software. (06 Marks)  
b. Explain the data formats, instruction formats and addressing modes of SIC/XE machine architecture. (10 Marks)

OR

- 2 a. Give the target address generated for the following machine instruction. 03C300H, 010030H, 0310C303H If (B) = 006000, (PC) = 003000, (x) = 000090. (06 Marks)  
b. Describe the following with respect to VAX machine. Memory, Registers, Data Formats, Addressing modes, Instruction Set. (10 Marks)

### Module-2

- 3 a. Write the algorithm of pass 1 of a 2 pass assembler. (10 Marks)  
b. What is program relocation? How will you solve the relocation problem? (06 Marks)

OR

- 4 a. Explain Expression, symbol defining statement with respect to assembler design. (10 Marks)  
b. How forward references are handled in multi pass assembler? (06 Marks)

### Module-3

- 5 a. Mention the functions of a loader. Write an algorithm for absolute loader. (06 Marks)  
b. With programming example, explain a simple bootstrap loader. (10 Marks)

OR

- 6 a. Explain the following loader design options LINKAGE EDITOR, DYNAMIC LINKING. (10 Marks)  
b. Write in brief about MS – DOS Linker. (06 Marks)

### Module-4

- 7 a. What do you mean by a MACRO? Explain macro definition and expansion with suitable example. (10 Marks)  
b. What is conditional macro expansion? With an example, explain any one statement used for conditional macro expansion. (06 Marks)

OR

- 8 a. With an illustrative example, explain the macro processing features of MASM macro processor. (10 Marks)  
b. What are the advantages and disadvantages of general purpose macro processors? (06 Marks)

### Module-5

- 9 a. What is the use of compilers? Explain basic compiler functions. (10 Marks)  
b. Discuss machine dependent compiler features. (06 Marks)

OR

- 10 a. Describe the terms interpreters, compiler – compilers. (06 Marks)  
b. Explain about sunOS C compiler. (10 Marks)

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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.