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

13MCA24

Second Semester MCA Degree Examination, June/July 2017
System Software

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions.***

1 a. Define system software. Differentiate between system software and application software. **(05 Marks)**

b. Explain SIC/XE machine architecture. **(10 Marks)**

c. Write sequence of instructions for SIC/XE to copy "system software" from str1 to str2 using indexing and looping operations. **(05 Marks)**

2 a. Write an algorithm for pass-2 of assembler. **(10 Marks)**

b. Explain the program block in detail. **(05 Marks)**

c. Explain the working of multipass assembler. **(05 Marks)**

3 a. What are the basic functions of a loader? **(04 Marks)**

b. Explain the working of the algorithm of an absolute loader and give an example of an absolute loader. **(06 Marks)**

c. Write an algorithm for pass 1 and pass 2 of a linking loader. **(10 Marks)**

4 a. Explain the following loader design options:
i) Linkage editor
ii) Dynamic linking **(10 Marks)**

b. Write in brief:
i) MS-DOS-linker
ii) Automatic library search **(10 Marks)**

5 a. With a neat diagram, explain the structure of an editor. **(10 Marks)**

b. Explain the debugging functions and capabilities of an interactive debugging system. **(10 Marks)**

6 a. Explain macro definition and expansion. **(04 Marks)**

b. Explain macro processor algorithm and data structures. **(10 Marks)**

c. Explain the following:
i) Concatenation of macro-parameters
ii) Keyword macro parameters **(06 Marks)**

7 a. Explain the following:
i) Recursive macro expansion
ii) General purpose macro processors **(10 Marks)**

b. Explain the following:
i) MASM macro processor
ii) General purpose macro processors **(10 Marks)**

8 a. Explain the following:
i) Grammars ii) Lexical analysis
iii) Syntactic analysis iv) Code generation **(10 Marks)**

b. Write a note on the following:
i) Division into passes ii) Compiler-compiler **(10 Marks)**

* * * * *