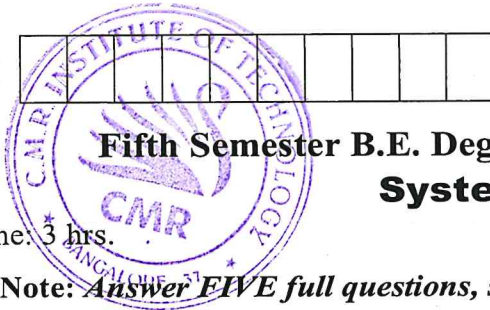


USN

10CS52



**Fifth Semester B.E. Degree Examination, Feb./Mar. 2022**  
**Systems Software**

Time: 3 hrs.

Max. Marks: 100

Note: Answer FIVE full questions, selecting atleast TWO questions from each part.

**PART – A**

- 1 a. Define System Software and Application Software. (04 Marks)
- b. Explain SIC/XE machine instructions formats and addressing modes by clearly indicating setting of different flag bits. (10 Marks)
- c. Suppose that ALPHA and BETA are the two arrays of 100 words. Another array of GAMMA elements are obtained by adding the corresponding ALPHA elements with BETA elements. Write SIC/XE program, use immediate addressing and register to register instructions to make the process as efficient as possible. (06 Marks)
- 2 a. Explain the following with an example i) RESW ii) EQU iii) ORG iv) CSECT. (08 Marks)
- b. What is the need for 2-pass assembler? Explain with an example. (04 Marks)
- c. Write an algorithm for Pass 1 of 2-Pass assembler. (08 Marks)
- 3 a. What is a literal? When LTORG is used? Explain with an example. (04 Marks)
- b. Compare a 2-pass assembler with a 1-pass assembler. How forward references are handled in one pass assembler? (10 Marks)
- c. Explain Multipass assembler with an example. (06 Marks)
- 4 a. Define Loader? What are the basic functions of a loader? (04 Marks)
- b. What do you mean by relocating loaders? Explain the methods for relocation as a part of object program. (10 Marks)
- c. Explain Dynamic linking. Discuss its advantages. (06 Marks)

**PART – B**

- 5 a. Explain briefly, structure of a typical editor with the help of suitable block diagram. (08 Marks)
- b. Discuss the relationship between editing and viewing buffers functions. (06 Marks)
- c. Write a note on the aspect of user interface criteria. (06 Marks)
- 6 a. Define the structure of a macro, with an example. (04 Marks)
- b. Explain with an example the various datastructures used in the implementation of macroprocessor. (06 Marks)
- c. Explain the following : (10 Marks)
  - i) Conditional macro expansion
  - ii) Recursive macro processor
- 7 a. Explain the specification of a Lex program. (04 Marks)
- b. Write a lex program to recognize and count the number of identifiers in a given input life. (06 Marks)
- c. What is regular expression? Briefly explain all the characters that form regular expression. (10 Marks)
- 8 a. Explain how YACC programs are compiled. (04 Marks)
- b. What is a conflict? Explain different types of conflicts, with an example. (06 Marks)
- c. Write YACC program to evaluate an arithmetic expression for the operators additions, subtraction, multiplication, division and unary minus operations. (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.