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**Presidency University**

**Bengaluru**

**School Of Computer Science and Engineering & Information Science**

**Summer-Term Examinations, Aug 2024**

**Date**: 6-8-2024

**Time**: 1:00pm to 4:00pm

**Max Marks**: 100

**Weightage**: 50%

**Odd Semester**: 2023 - 24

**Course Code**: CSE2050

**Course Name**: System Software

**Department:** B.Tech, ISE

**Instructions:**

1. *Read the all questions carefully and answer accordingly.*
2. *Do not write any matter on the question paper other than roll number.*

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| **Q.No** | **Questions** | **Marks** | **CO** | **RBT** |
| 1 | 1. Differentiate between System software and Application software | 4 | CO1 | L1 |
| 1. Explain addressing modes of SIC/XE with examples. | 6 | CO1 | L2 |
| 1. With reference to SIC standard version explain instruction set. | 10 | CO1 | L3 |
| OR | | | | |
| 2 | 1. List and explain the four instruction formats of SIC/XE machine. | 4 | CO1 | L1 |
| 1. Write a program to read a constant from memory location FIVE and store the same into memory location ALPHA. Read a character from memory location CHARZ and store it in location C1 for SIC machine. | 6 | CO1 | L2 |
| 1. Write a SIC/XE program to divide NUM1 and NUM2 setting QUA to quotient and REM to remainder. | 10 | CO1 | L3 |

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| 3 | 1. Define assembler directive. Explain any two types of directives used in SIC machine. | 4 | CO2 | L1 |
| 1. Write a note on MASM assembler | 6 | CO2 | L2 |
| 1. Generate the complete object program for the following assembly language program of an SIC system. Assume below opcodes (all in hexadecimal) | 10 | CO2 | L3 |

OR

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| 4 | 1. Give the format for the following record necessary to obtain object code.    1. Header record    2. Text record | 4 | CO2 | L1 |
| 1. Explain load and go assembler with an example. | 6 | CO2 | L2 |
| 1. Compare a two pass assembler with a one pass assembler. How forward   References are handled in one pass assemblers? | 10 | CO2 | L3 |

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| 5 | 1. Explain Bootstrap loader. | 4 | CO3 | L1 |
| 1. Explain MS DOS Linker. | 6 | CO3 | L2 |
| 1. With a neat diagram explain the processing of object program using linking loader and linkage editor. | 10 | CO3 | L3 |

OR

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| 6 | 1. Explain an Absolute Loader. | 4 | CO3 | L1 |
| 1. Write an algorithm for pass 1 of a linking loader. | 6 | CO3 | L2 |
| 1. Write an algorithm for pass 2 of a linking loader. | 10 | CO3 | L3 |

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| 7 | 1. Write a short note on ‘keyword macro parameters’ | 4 | CO4 | L1 |
| 1. Explain conditional macro expansions | 6 | CO4 | L2 |
| 1. What are the basic functions of macro processor? Explain the various data structures used in the implementation of a one-pass macro processor. | 10 | CO4 | L3 |

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| 8 | 1. Write a short notes on Recursive macro expansion | 4 | CO4 | L1 |
| 1. List the different tables used for a macro processor. Explain their functions | 6 | CO4 | L2 |
| 1. Write an algorithm for one pass macro processor | 10 | CO4 | L3 |

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| 9 | 1. List the important 4 tasks to be accomplished by a text editor for an interactive user computer dialogue | 4 | CO5 | L1 |
| 1. What is line editor. What are the features of line editor | 6 | CO5 | L2 |
| 1. Explain the concept of User Interface. | 10 | CO5 | L3 |

OR

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| 10 | 1. Give the relationship between editing and viewing process | 4 | CO5 | L1 |
| 1. Discuss three basic types of computing environments for editors | 6 | CO5 | L2 |
| 1. What is an interactive editor? Explain the typical editor structure | 10 | CO5 | L3 |