

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FIFTH SEMESTER B.TECH DEGREE EXAMINATION, DECEMBER 2018

Course Code: CS303

Course Name: SYSTEM SOFTWARE

Max. Marks: 100

Duration: 3 Hours

PART A

Answer all questions, each carries 3 marks.

Marks

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|---|---|-----|
| 1 | Write a sequence of instructions for SIC to set $\text{ALPHA} = \text{BETA} * 9 + \text{GAMMA}$. | (3) |
| 2 | List out the various registers used in SIC along with their purpose. | (3) |
| 3 | What is meant by forward reference? How it is resolved by two pass assembler? | (3) |
| 4 | Write down the format of Modification record. Describe each field with the help of an example. | (3) |

PART B

Answer any two full questions, each carries 9 marks.

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| 5 | What are the various addressing modes supported by SIC/XE? With the help of an example, explain how to find target address during assembling in each case. | (9) |
| 6 | a) Distinguish between Application software and System Software | (3) |
| | b) Let A,B & C are arrays of 10 words each. Write a SIC/XE program to add the corresponding elements of A & B and store the result in C. | (6) |
| 7 | a) What are the functions of Operating System? | (3) |
| | b) With the aid of an algorithm explain the Second pass of a Two Pass Assembler. | (6) |

PART C

Answer all questions, each carries 3 marks.

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| 8 | What are control sections? What is the advantage of using them? | (3) |
| 9 | Given an idle computer with no programs in memory, how do we get things started? | (3) |
| 10 | What are the uses of assembler directives EXTDEF and EXTREF? | (3) |
| 11 | What is the use of bitmask in program relocation? | (3) |

PART D

Answer any two full questions, each carries 9 marks.

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| 12 | a) Distinguish between Program Blocks and Control Section | (2) |
| | b) How the assembler handles multiple Program blocks? | (7) |
| 13 | a) Write short note on Dynamic Linking | (3) |

- b) Explain the algorithm for Pass 1 of Linking Loader. (6)
- 14 a) List and explain the different machine independent features of loaders (3)
- b) Explain the working of any one type of One pass Assembler (6)

PART E

Answer any four full questions, each carries 10 marks.

- 15 a) Differentiate between keyword and positional macro parameters. (3)
- b) Explain the working of One pass Macro Processor. (7)
- 16 a) Is it possible to include labels in the body of macro definition? Justify your answer. (6)
- b) Write short note on concatenation of macro parameters within a character string. (4)
- 17 Explain the different types of conditional macro expansion statements and their implementation with examples. (10)
- 18 a) Draw the structure of a typical text editor and describe the functions of each block. (8)
- b) List out the main four tasks associated with the Document Editing Process. (2)
- 19 a) Describe the functions and capabilities of an Interactive debugging system. (6)
- b) List out the criteria that should be met by the user interface of an efficient debugging system. (4)
- 20 a) What is a Device Driver? What are the major design issues of a Device Driver? (5)
- b) Distinguish between Character and Block Device drivers. (5)
