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Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

FIFTH SEMESTER B.TECH DEGREE EXAMINATION, APRIL 2018

Course Code: CS303

Course Name: SYSTEM SOFTWARE (CS)

Max. Marks: 100 Duration: 3 Hours

PART A

Answer all questions, each carries 3 marks Marks

1 Write notes on SIC machine architecture. (3)

2 Explain the syntax of the records in the Object Program File. (3)

3 What are assembler directives? List out any five assembler directives in SIC. (3)

4 Explain the different data structures used in the implementation of Assemblers. (3)

PART B

Answer any two full questions, each carries 9 marks

5 a) Briefly discuss the architecture of SIC/XE machine. (5)

b) Write a subroutine for SIC/XE that will read a record into a buffer. The record may be any length from 1 to 100 bytes. The end of record is marked with a "null" character (ASCII code 00). The subroutine should place the length of the record read into a variable named LENGTH. Use immediate addressing and register-to-register instructions to make the process as efficient as possible. (4)

6 Explain the two passes of the assembler algorithm with proper example. (9)

7 a) With suitable example, explain the concept of Program Relocation. (5)

b) List out the basic functions of Assemblers with proper examples. (4)

PART C

Answer all questions, each carries 3 marks

8 What is a Literal? How is a literal handled by an assembler? (3)

9 Explain the algorithm for an absolute loader. (3)

10 Write notes on Multi pass assemblers. (3)

11 What is Automatic Library Search. (3)

PART D

Answer any two full questions, each carries 9 marks

12 a) With example, write notes on Program Blocks. (5)

b) What is a forward reference? How are forward references handled by a single pass assembler? (4)

13 With the data structures used, state and explain two pass algorithm for a linking loader. (9)

14 a) Explain how external references are handled by an assembler. (5)

b) What is Dynamic Linking? Explain with example. (4)

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PART E

Answer any four full questions, each carries 10 marks

15		Explain the Macroprocessor algorithm.	(10)
16	a)	What are the different data structures used in the implementation of the Macroprocessor algorithm? Give examples.	(5)
	b)	Write notes on Recursive Macro Expansion.	(5)
17	a)	How are unique labels generated in a Macro Expansion?	(5)
	b)	Explain Conditional Macro Expansion with an example.	(5)
18	a)	Explain the general design of device driver.	(5)
	b)	Differentiate between Character and Block Devices.	(5)
19	a)	Explain the different types of Text Editors and User Interface.	(5)
	b)	Explain Editor structure in detail with neat figures.	(5)
20	a)	What is a Debugger?	(4)
	b)	Explain the different debugging methods in detail.	(6)

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