Reg No.:_____   Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Fifth Semester B.Tech Degree (S,FE) Examination January 2022 (2015 Scheme)

Course Code: CS303
Course Name: SYSTEM SOFTWARE

Max. Marks: 100   Duration: 3 Hours

PART A
Answer all questions, each carries 3 marks.

         Marks

1	Differentiate between system software and application software.	(3)
2	Give the role of various registers in SIC machine.	(3)
3	Identify the addressing modes in the following machine code for SIC /XE machine	(3)
	(i) 010030 (ii) 032600	
4	List the five basic assembler functions.	(3)

PART B
Answer any two full questions, each carries 9 marks.

5	a)	Discuss the architecture of SIC/XE machine.	(6)
	b)	What do you mean by assembler directives? Explain any four with examples.	(3)
6	a)	Explain the Pass2 Algorithm for a two-pass SIC Assembler along with the data structures used in it.	(5)
	b)	Write the sequence of instructions in SIC/XE to add two integer arrays S and T and store the contents to array Z. S and T each contains 10 integers.	(4)
7	a)	Briefly explain any three important records used in an object program.	(5)
	b)	Write the sequence of instructions in SIC, to transfer the string "UNIVERSITY" stored at location LOCA1 to LOCA2.	(4)

PART C
Answer all questions, each carries 3 marks.

8	How is modification record useful in linking different control sections in a program?	(3)
9	What do you mean by external refereneces ? Explain it in the context of assemblers.	(3)
10	Give the Absolute Loader Algorithm	(3)
11	With the help of a diagram, compare linking loader and linkage editor.	(3)

PART D

Answer any two full questions, each carries 9 marks.

12 a) Differentiate between program blocks and control sections? What are the (4) assembler directives related to these?

b) With a suitable example explain the working of a multipass assembler. (5)

13 a) State and explain pass 2 of a two pass algorithm for a linking loader. (6)

b) Write short notes on the important data structures used by a linking loader. (3)

14 a) Briefly explain any two machine independent assembler features. (6)

b) What are the benefits of dynamic linking? (3)

PART E

Answer any four full questions, each carries 10 marks.

15 a) State and explain the algorithm used by one pass macroprocessor. (7)

b) What are the datastructures used in a one pass macroprocessor algorithm. (3)

16 a) Differentiate between character and block devices. (5)

b) Describe the user interface used in text editor. (5)

17 a) Write notes on keyword macro parameters and positional macro parameters (6)

b) Explain the general design of a device driver (4)

18 a) Explain the generation of unique labels in macro expansion. (5)

b) What do you mean by debugger? What are its functions and capabilities (5)

19 a) Explain conditional macro expansion with a suitable example. (5)

b) Explain the text editor structure with a diagram. (5)

20 a) Write notes on recursive macro expansion. (5)

b) Explain different debugging methods in detail. (5)

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