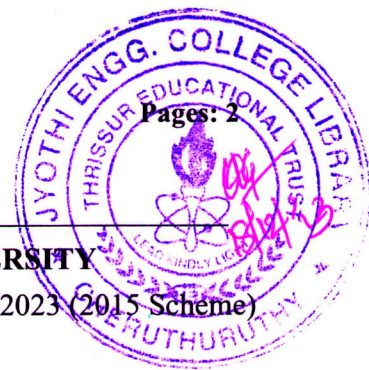


B

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Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S5 (S, FE) / S3 (PT) (S, FE) Examination December 2023 (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 | Distinguish between System software and application software. | (3) |
| 2 | List out important registers used in SIC/XE and their functions. | (3) |
| 3 | Write a sequence of instruction for SIC to swap the values of ALPHA and GAMMA. | (3) |
| 4 | Distinguish WORD and RESW with example. | (3) |

PART B

Answer any two full questions, each carries 9 marks.

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|---|-------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 5 | a) Briefly describe the architecture of SIC machine. | (5) |
| | b) Write a sequence of instructions for SIC to find average of three integer numbers ALPHA, BETA and GAMMA and store the result in DELTA. | (4) |
| 6 | Describe the Pass 1 of Pass 2 algorithm in detail. | (9) |
| 7 | a) Explain assembler directives? List out any three assembler directives. | (4) |
| | b) Describe the data structures used by the assembler with examples. | (5) |

PART C

Answer all questions, each carries 3 marks.

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|----|------------------------------------------------------|-----|
| 8 | Describe program blocks with example. | (3) |
| 9 | Give the absolute loader algorithm. | (3) |
| 10 | Explain the use of EQU and ORG assembler directives. | (3) |
| 11 | Write short notes about multi-pass assembler. | (3) |

PART D

Answer any two full questions, each carries 9 marks.

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|----|--------------------------------------------------------------------------------|-----|
| 12 | Give the algorithm for Pass 1 of linking loader. | (9) |
| 13 | a) Describe how external references are handled by the assembler with example. | (4) |
| | b) Explain the working of multi-pass assembler with example. | (5) |

- 14 a) Write notes on how the linkage editor is working with neat diagram. (6)
b) Briefly discuss the working of control sections with suitable example. (3)

PART E

Answer any four full questions, each carries 10 marks.

- 15 Describe the structure of text editor and explain functions of each block. (10)
- 16 a) What is character device driver? Explain. (5)
b) Define the concept of concatenation of macro parameters with example. (5)
- 17 a) Write shorts notes on macro definition and expansion with example. (5)
b) Describe how unique labels are generated within a macro expansion with example. (5)
- 18 a) What is device driver? Describe the general design issues of a device driver. (6)
b) Explain the important functions of an interactive debugging system. (4)
- 19 a) Describe the data structures used in macro processor algorithm with example. (6)
b) Briefly discuss about the concept of recursive macro expansion. (4)
- 20 List out different debugging methods in details with neat sketch. (10)
