**ARMY INSITUTE OF TECHNOLOGY**

**DEPARTMENT OF COMPUTER ENGG**

**Subject :** System Programming & Operating System Lab

**Class :** TE Comp (A) Sem II (2020-21)

**Faculty Name :** Ms. Rushali S. Patil

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| **Sr. No.** | **Title** |
|  | **Group A** |
| 1 | Design suitable data structures and implement pass-I of a two-pass assembler for pseudo-machine in Java using object oriented feature. Implementation should consist of a few instructions from each category and few assembler directives |
| 2 | Implement Pass-II of two pass assembler for pseudo-machine in Java using object oriented features. The output of assignment-1 (intermediate file and symbol table) should be input for this assignment |
| 3 | Design suitable data structures and implement pass-I of a two-pass macro-processor using OOP features in Java |
| 4 | Write a Java program for pass-II of a two-pass macro-processor. The output of assignment-3 (MNT, MDT and file without any macro definitions) should be input for this assignment |
|  | **Group B** |
| 5 | Write a program to create Dynamic Link Library for any mathematical operation and write an application program to test it. (Java Native Interface / Use VB or VC++) |
| 6 | Write a program using Lex specifications to implement lexical analysis phase of compiler to generate tokens of subset of ‘Java’ program |
| 7 | Write a program using Lex specifications to implement lexical analysis phase of compiler to count no. of words, lines and characters of given input file |
| 8 | Write a program using YACC specifications to implement syntax analysis phase of compiler to validate type and syntax of variable declaration in Java |
| 9 | Write a program using YACC specifications to implement syntax analysis phase of compiler to recognize simple and compound sentences given in input file |
|  | **Group C** |
| 10 | Write a Java program (using OOP features) to implement following scheduling algorithms: FCFS , SJF (Preemptive), Priority (Non-Preemptive) and Round Robin (Preemptive) |
| 11 | Write a Java program to implement Banker’s Algorithm |
| 12 | Implement UNIX system calls like ps, fork, join, exec family, and wait for process management (use shell script/ Java/ C programming) |
| 13 | Study assignment on process scheduling algorithms in Android and Tizen |
|  | **Group D** |
| 14 | Write a Java Program (using OOP features) to implement paging simulation using  1. Least Recently Used (LRU)  2. Optimal algorithm |

**Subject In-charge HOD (Comp Dept.)**