LP-I List of Lab Assignments for Mock Practical

Sr. No.	Expt. No.	Problem Statement
1	A1_1	Design suitable data structures and implement Pass-I of a two-pass assembler for pseudo-machine. Consider following assembler directives in the input test case, (i) ORIGIN, (ii) EQU
2	A1_2	Design suitable data structures and implement Pass-I of a two-pass assembler for pseudo-machine. Consider following assembler directives in the input test case, (i) LTORG, (ii) EQU
3	A1_3	Design suitable data structures and implement Pass-II of a two-pass assembler for pseudo-machine. [The output of Pass-I (intermediate code file and symbol table, Literal Table) should be input for Pass-II.]
4	A2_1	Design suitable data structures and implement Pass-I of a two-pass macro- processor.
5	A2_2	Design suitable data structures and implement Pass-II of a two-pass macro- processor. [The output of Pass-I (MNT, MDT and intermediate code file without any macro definitions) should be input for Pass-II.]
6	B1 B2	Write a program to solve Classical Problems of Synchronization using Mutex and Semaphore. [Producer-Consumer Problem/ Readers and Writers Problem/ Dining-Philosopher Problem] **OR** Write a program to simulate CPU Scheduling Algorithms. (i) FCFS, (ii) Round Robin (Preemptive)
7	B1 B2	Write a program to solve Classical Problems of Synchronization using Mutex and Semaphore. [Producer-Consumer Problem/ Readers and Writers Problem/ Dining-Philosopher Problem] **OR** Write a program to simulate CPU Scheduling Algorithms. (i) SJF (Preemptive), (ii) Priority (Non-Preemptive)
8	B3 B4	Write a program to simulate Memory placement strategies, (i) best fit, (ii) first fit, (iii) next fit **OR** Write a program to simulate Page replacement algorithms, (i) FIFO (ii) OPTIMAL
9	B3 B4	Write a program to simulate Memory placement strategies, (i) best fit, (ii) first fit, (iii) worst fit **OR** Write a program to simulate Page replacement algorithms, (i) LRU (ii) FIFO
10	ELE_1	**[IoT & ES]** Write an application to capture and store the image. [Connectivity of Raspberry-Pi /Beagle board with camera.] **[DS]** Implementation of Inter-process communication using socket programming: implementing multithreaded echo server. **OR** Implementation of RPC Mechanism. **[HCI]** Design a User Interface in Python.

11	ELE_2	**[IoT & ES]**
		Create a small dashboard application to be deployed on cloud.
		[Different publisher devices can publish their information and interested application can subscribe.]
		[DS]
		Simulation of election algorithms (Ring and Bully).
		OR
		Implementation of Clock Synchronization:
		   (i) NTP
		   (ii) Lamport's clock
		[HCI]
		To redesign existing Graphical User Interface with screen complexity.