XIM University

School of Computer Science and Engineering

Batch: 2nd year 4th Semester

Session: 2022-23

Subject Name: Operating System

Assignment 1

Total Points: 50 points, Evaluation weightage: 10 marks

Date of Issue: 27.12.2023,   Date of Submission: 7.1.2023

Note: All answers must be handwritten with neat and clean handwriting. Write short and to the point answers. Use A4 sheet and submit the assignment in a channel file. The frontpage must be given along with the assignment.

1. What is an Operating system? List the services provided by an Operating System?   5
2. Distinguish among following terminologies i) Multiprogramming systems ii) Multitasking Systems iii) Multiprocessor systems.   5
3. What is meant by distributed systems? What are the advantages and disadvantages of distributed systems?   5
4. Draw the process state diagram and explain. What do you mean by PCB? What are its contents? Explain.   5+5
5. Assume that following processes have arrived in the order 1,2,3,4 and 5:

Process	Arrival Time	Burst Time	Priority
1	0	9	2
2	2	3	1
3	5	7	5
4	6	4	2
5	7	6	3

Give Gantt chart and calculate Average Turnaround Time and Average Waiting Time and Average Response Time for:
1. FCFS
2. SJF
3. SRTF
4. Preemptive priority algorithm
5. RR of time quantum 3   5X4

6.   What is critical section problem and what are the solutions? Define semaphore.   5

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