



NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI-620015
B.TECH. DEGREE FOURTH SEMESTER
SEMESTER EXAMINATION, MAY 2021
BRANCH: COMPUTER SCIENCE AND ENGINEERING
SUB.CODE & TITLE: CSPC43 OPERATING SYSTEMS

TIME: 10.00 AM to 12.00 Noon

DATE: 12.05.2021

MAX. MARKS: 50

Buffer Time: 30 minutes

Note to Student:

- 1. Make sure the 'Declaration and statement of authorship' is uploaded along with the answer sheet as cover sheet (First Sheet)**
- 2. TIME MANAGEMENT IS YOUR RESPONSIBILITY**

ANSWER ALL QUESTIONS

1a. What are the benefits of multithreaded programming? Explain the different ways of establishing relationship between user threads and kernel threads.

b. Differentiate Process termination and Thread termination. (6, 4)

2. Consider the following four processes, with the length of the CPU-burst time given in milliseconds:

Process Arrival Time Burst Time

P1	0	8
P2	1	4
P3	2	9
p4	3	5

Supposing Shortest Job first scheduling policy is followed, find out the average turnaround time if different implementations are used.

- i) SJF is applied when the arrival time of all jobs is Zero
- ii) SJF is applied when job arrivals are different.
- iii) SJF is applied when one job completes the execution and different arrival time is considered. (10)

3a. Explain the different techniques used for structuring page table.

b. What is locality of reference? What are its types? Explain how working set uses the locality of reference concept in memory management. (5, 5)

4a. What is the role of access matrix in Protection? Explain the different ways of implementing Access Matrix.

b. Explain the techniques used to improve reliability and performance in mass storage systems. (5, 5)

5a. What is a Distributed System? How is it different from Network? Explain the salient features of Distributed Operating Systems.

b. Discuss the issues related to directory implementation in distributed systems. (6, 4)
