

2024

ADVANCED OPERATING SYSTEM

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

Answer **any five** questions.

1. a) What is Inter Process Communication? What are the different Inter Process Communication mechanisms? 10
b) What are the advantages of Multithreading? Differentiate between Multithreading and Multiprogramming. 10
2. a) Discuss the Dining Philosopher Problem with regard to Concurrency Control in OS. Provide a starvation and deadlock free solution to Dining Philosopher Problem. 20
3. a) Explain the principle of Locality of Reference. State its role in memory management of OS. 10
b) What is a kernel? Briefly discuss the key differences between a Monolithic Kernel and a Microkernel. 10
4. a) Why to make a system distributed? Explain the architecture of Remote Procedure Call. 10
b) Compare physical clock and logical clocks. 10
5. Explain with an example the implementation of Lamport clock using Causality and Happens Before relation 20
6. Write short notes on: 20
 - a) System Call
 - b) Network Time Protocol