

Subject: Principles of Operating Systems

SYBSc. CS - Semester III **ASSIGNMENT**

ASSIGNMENT 1

1. Define an **Operating System**. Explain its role in a computer system.
2. List and explain the **functions of an Operating System**.
3. What is a **race condition**? Give an example.
4. Define a **process**. Explain the different states of a process with a diagram.
5. What are the **criteria for CPU scheduling**? Explain briefly.

ASSIGNMENT 2

6. Define a **deadlock**. What are the four necessary conditions for deadlock?
7. Compare **contiguous memory allocation** methods (fixed vs variable partitions).
8. Compare different **disk scheduling algorithms** (FCFS, SSTF, SCAN).
9. Differentiate between **deadlock prevention** and **deadlock avoidance**.
10. What is the **Banker's Algorithm**? Explain briefly.