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USN

School of Computer Science and Engineering

B.Tech (Hons.)

CIE-1 Question Paper

Academic Year 2024-2025

Course: Operating Systems SET- 3		Course Code: CS1103	Semester: II
Time: 2:30 pm to 4:00 pm	Duration: 90 minutes	Date: 10-03-2025	Max Marks: 20

Notes/ Instructions:

a) Answer all questions

Sl. No.	PART A – Max Marks(8)	Marks	L1-L6	CO
1.	Write the key advantage and major drawback of a monolithic OS	2	L2	1
2.	What is stack overflow and how does it occur?	2	L2	1
3.	Define process and thread. Explain the concept of context switching for both.	2	L2	2
4.	Identify the appropriate type of operating system based on functional capabilities for the following scenarios, and explain briefly. "A factory automation system requires an OS that can control robotic arms efficiently." strict constraint no error	2	L2	2

Sl. No.	PART B – Max Marks (12)	Marks	L1-L6	CO
5.	"A company's employees work from different locations and need to share files securely over the internet. They access shared resources through cloud storage." Analyze which OS functionalities are involved in enabling this secure remote access and file sharing.	6	L4	1
6.	A system has two processes P1 and P2. P1 is performing CPU execution, while P2 is waiting for I/O. Suddenly, P1 generates an I/O request, and P2's I/O completes at the same time. Analyze and explain the state transitions for both processes.	6	L4	2

Course Outcomes

1. Understand the structural components and core functionalities of an operating system.
2. Apply process management techniques and scheduling algorithms to ensure efficient execution and resource allocation.

L1- Remember, L2- Understand, L3 – Apply, L4- Analyse, L5 – Evaluate, L6 – Create