

USMAN Institute of Technology

Department	Engineering Technology
Course-Code	CET225
Course-Name	Operating Systems
Submission Deadline	26-11-2024
Total Marks	5

Assignment 01

General Instructions:

- Your work should be original, not copied from internet or any other resource
- You can discuss with class fellows and research from internet but do not copy paste.
- Assignment should be submitted before due date.

[CLO1-C2-PLO1]

Question#01: Explain the following types of Operating systems

1. Network operating system
2. Distributed Operating system
3. Embedded Operating system

Question#02: Read given scenarios and provide reasons against each scenario.

1: Scenario: You are using your laptop to browse the web, play music, and download a large file simultaneously.

Question: How does the operating system manage these different tasks at the same time? Explain the role of multitasking and scheduling in this scenario.

2: Scenario: A company is developing software for a medical device that must respond to patient inputs in real time.

Question: What type of operating system would be most suitable for this device, and why? Discuss the role of real-time operating systems (RTOS) in critical applications.

3: Scenario: A cybersecurity analyst discovers that malware has infiltrated a system and is running in user mode, attempting to escalate privileges to gain control of the system.

Question: How does the separation between user mode and kernel mode protect the system? How can an OS prevent privilege escalation in this case?