TUTORIAL ONE

Review on Computer System Operation

1. Review the following concepts on Computer System Operation, and explain how they are related to Operating Systems.

   a) Computer Organization

   b) Interrupts

   c) I/O Structure: Interrupt-Driven Data Transfer, Direct Memory Access (DMA) Data Transfer

OS Structures and Concepts

2. Indicate whether the following statements are true or false. Justify your answers.

   a) All I/O instructions are privileged instructions.

   b) Given a base register value of 0x1000 and a limit register value of 0x1000, access to memory location 0x1FFF will generate a trap.

   c) Popular operating systems for personal computer use (such as Windows and Linux) are real-time systems.

   d) A system call always generates a trap.

3. Distinguish between multiprogramming and multiprocessing. What were the key motivations for the development of each?

2. C) real-time operating systems are designed to run critical applications reliably and with precise timing (paying attention to the programmer's priorities).

Microsoft Windows, MacOS, Unix, and Linux are not "real-time." They are often completely unresponsive for seconds at a time. They indicate this condition by displaying an hourglass or a clock symbol or by simply refusing to respond to mouse-clicks or keyboard input.