

# **Operating Systems–1: CS3510**

## **Autumn 2023**

### **Theory Assignment 1: Chapter 1**

**Submission Date: 14<sup>th</sup> November 2023, 9:00 am (before the class)**

1. Question 1.14 from the Book: (a) What is the purpose of interrupts? (b) How does an interrupt differ from a trap? (c) Can traps be generated intentionally by a user program? (d) If so, for what purpose?
2. Question 1.16 from the Book: Direct memory access is used for high-speed I/O devices in order to avoid increasing the CPU 's execution load.
  - (a) How does the CPU interface with the device to coordinate the transfer?
  - (b) How does the CPU know when the memory operations are complete?
  - (c) The CPU is allowed to execute other programs while the DMA controller is transferring data. Does this process interfere with the execution of the user programs? If so, describe what forms of interference are caused.