



**The University of the West Indies, St. Augustine**  
**INFO2603 Platform Technologies 1**  
**Semester 1, 2018/2019**

**Work Sheet #3**

**OS Concepts, File Management and Process Management**

1. Describe the purpose of the Master Boot Record and Partition Table.
2. Describe the hierarchical file structure used by Windows.
3. What is the difference between an absolute path and a relative path to a file?
4. List and describe four file attributes associated with files in NTFS.
5. Compare the characteristics of a CPU-bound process versus an I/O-bound process.
6. Name three examples of I/O devices that cannot be shared.
7. Describe the advantages of having a separate queue for print I/O interrupts and another for disk I/O interrupts as illustrated in the figure below.
8. Compare and contrast a process and a thread.
9. When using a personal computer, it can be easy to determine when a job is caught in an infinite loop or a system-wide freeze. The typical solution to this problem is for the user to manually intervene and terminate the offending job, or in the worst case, all jobs. What mechanism would you implement in the Process Scheduler to automate the termination of a job that's in an infinite loop? Take into account jobs that legitimately use large amounts of CPU time.
10. Which scheduler is responsible for scheduling threads in a multithreading system?
11. Give a real world example of a task that you perform everyday via the cloud. Explain how you would cope if the network connection suddenly became unavailable.
12. In your opinion, what would be the consequences if the following managers stopped communicating with each other:
  - (i) The Memory Manager and the File Manager
  - (ii) The Memory Manager and the Process Manager
13. Give an example of an organisation that might find batch-mode processing useful, and explain why.
14. Give an example of a situation that might need a real-time operating system, and explain in detail why you believe that would be the case.
15. Name five current operating systems and identify the platforms, computers or configurations where each is used.
16. Many people confuse main memory and secondary storage. Explain why this might happen, and describe how you would explain the differences to class-mates so they would no longer confuse the two.
17. Name the five key concepts about an operating system that you think a typical user needs to know and understand.
18. List three tangible, physical resources that can be found on a typical computer system.
19. Select two of the following professionals: an insurance adjuster, a delivery person for a courier service, a newspaper reporter, a doctor (general practitioner), or a manager in a supermarket. Suggest at least two ways that each person might use a mobile computer to work more efficiently.
20. Give real-world examples of interactive, batch, real-time, and embedded systems and explain the fundamental differences that distinguish each one from the others.
21. Briefly compare active and passive multiprocessing and give examples of each.