



COLLEGE OF COMPUTING AND INFORMATICS

Assignment 1 includes chapter 1, 2, 3 and 4

Course Title: Operating Systems

Course Code : IT241

Marks: 5

Deadline: 15/2/2016

1. What is a Kernel, and where is it loaded? (1 Mark)

Answer: “The one program running at all times on the computer” is the kernel. Everything else is either a system program (ships with the operating system) or an application program. The kernel is loaded in the main memory.

2. What are the possible process states? Give a simple description of each state. (1 Mark)

Answer: As a process executes, it changes state. The state of a process is defined in part by the current activity of that process. A process may be in one of the following states:

- **New.** The process is being created.
- **Running.** Instructions are being executed.
- **Waiting.** The process is waiting for some event to occur (such as an I/O completion or reception of a signal).
- **Ready.** The process is waiting to be assigned to a processor

3. What is the difference between a single-threaded process and a multi-threaded process. (1 Mark)

Answer: A single-threaded process has one program counter (Register+Stack) specifying the next instruction to execute. A multithreaded process has multiple program counters, each pointing to the next instruction to execute for a given thread.

4. Provide some advantages of multiprocessors systems. (1 Mark)

Answer: increased throughput, increased reliability, economy of scale

5. Provide different ways to pass parameters to the operating system. (1 Mark)

Answer: Registers, memory, stack