CROSS RIVER UNIVERSITY OF TECHNOLOGY, CALABAR
FIRST SEMESTER EXAMINATION
CSC 2103: OPERATING SYSTEM I

Answer question 1 and any other 3 questions **TIME**: **3Hrs**

1. (a) Give reasons why it was necessary to develop an operating systems software to use in the present day computer systems. Discuss two considerations that encouraged the development of operating systems.
   (b) What do you understand by Von Neumann architecture? Discuss this concept.
   (c) Describe two types of operating systems.
   (d) When a computer is switched on, it goes through a process called 'booting'. Describe what happens during this process.

2. (a) What is an interface? Name and describe three interfaces the operating system offers to users of a computer system
   (b) Distinguish clearly between multiprogramming and multiprocessing. State any advantage(s) these practices provide in the functioning of operating system

3. (a) What do you understand by an interrupt? Describe how this technique is used in managing the resources of the computer at various levels of management. Distinguish interrupt from Semaphores.
   (b) Processor management can be done at two levels. Name and describe these levels.

4. (a) What is ROM? Describe its role in computer startup/bootstrapping.
   (b) An operating system can be described as a resource manager. List the resources that can be managed in this context. Discuss how one of the resources you have listed can be managed.

5. Due to the critical role the operating system plays in a computer system, the operating system as a suite of programs is a complex software that must be properly engineered for optimal performance, hence the emergence of various operating system structures. In what circumstances will you adopt the layered structure over the simple structure? At what point will you prefer the modular structure to the layered structure?

6. (a) What is a process

   (b) With the aid of an appropriate diagram, identify the various states that a process may be in. discuss the transitions that can occur between the process states.

CROSS RIVER UNIVERSITY OF TECHNOLOGY, CALABAR
FIRST SEMESTER EXAMINATION 2014/2015

COURSE CODE: CSC 2103
COURSE TITLE: OPERATING SYSTEM I
INSTRUCTION: Answer question one any other three **TIME**: **1:30Mins**

1. (a) Explain the following terms as operating system concepts:
(i) Multithreading (ii) Bare machine (iii) Spooling (iv) Mutual exclusion (v) Distributed computing
(b) Differentiate between sequential process and concurrent process. Explain with example.
(c) What are the reasons for memory management?

2. (a) From the list of MSDOS commands given (i) TREE, ATTRIBUTE, DIR, DEL, COPY, FORMAT and CLS state their actions, give an example of the following, RENAME, MD and CD and also in not less two sentences explain how access the content of the directories.
(b) What is operating system? Give five (5) examples
(c) What is a kernel? Give five (5) task performed by kernel

3. (a) List and explain the methods of handling deadlock
(b) What are the reasons for concurrent process?
(c) What are general roles of application software in concurrency control?

4. (a) Classify operating system according to the extent of services it can provide
(b) What do you understand by buffering?
(c) What is process creation and process termination?

5. (a) What is synchronous and asynchronous in process management? What do you envisaged is the problem of synchronous communication?
(b) Describe the current activities of a process.
(c) What is paged memory management? State it advantages

6 (a) What are the reasons for CPU scheduling?
(b) Describe various scheduling algorithm you know.
(c) Give five general goals of operating system.

CROSS RIVER UNIVERSITY OF TECHNOLOGY, CALABAR
FIRST SEMESTER EXAMINATION 2018/2019

COURSE CODE: CSC 2103
COURSE TITLE: OPERATING SYSTEM I
INSTRUCTION: Answer FOUR question **TIME**: **2Hrs**

1a. (i) Define an operating system (OS)
(ii) What is a thread?
b. Discuss an operating system as an extended machine
c. Discuss an operating system as a resource manager

2a. Briefly explain the importance of abstraction as it applies to operating system
b. Briefly explain the history of the operating system with regards to the third generation computers
c. Explain the function of the following registers with regards to the OS: program counter register, stack pointer register and program status word register

3a. (i) What is SPOOLING?
(ii) With a diagram explain the process state
b. Explain the process model
c. What is the implication of a multithreaded CPU on the operating system?

4a. List and briefly explain the memory hierarchy
b. (i) Explain how the OS abstract and present the disks storage to the user
c. Briefly explain the following operating systems: mainframe OS, multiprocessor OS, server OS.

5a. Briefly explain the operations of a real-time operating system
b. (i) Explain the concept of a process and address space
(ii) How is a process created and terminated?
c. Explain the concept of virtual memory and why the OS creates it.

6a. What is the Shell and what is its function in the UNIX OS?
b. (i) What are system calls and what is their role in file management
(ii) What are daemon processes
c. Explain the basic idea behind the design of the microkernel.