FOUNTAIN UNIVERSITY OSOGBO, NIGERIA

P.M.B.4491, OSOGBO, OSUN STATE.

COLLEGE OF NATURAL AND APPLIED SCIENCES

DEPARTMENT OF MATHEMATICAL AND COMPUTER SCIENCES

SECOND SEMESTER EXAMINATION 2020/2021 SESSION

CPS 206: OPERERATING SYSTEM I **Credit Unit/Status: 2 (C)**

Time Allowed:1hrs 30mins 24/08/2021

INSTRUCTION(s): ANSWER ALL IN SECTION A AND ANY TWO (2) IN SECTION B

SECTION A: ATTEMPT ALL QUESTIONS

(a) Give a simple definition of an Operating System (OS). [2 Marks]

(b) Justify the need for an Operating System in any Computer system. [2 Marks]

(c) In your opinion, why do you think it is important to learn about OS, since most of us may not be writing or design OS? [2 Marks]

(d) Is the term "process" and "program" synonymous? Explain. [2 Marks]

(e) Explain the term Process Control Block (PCB) [2 Marks]

(f) Identify necessary Process Information maintained by the PCB. [2 Marks]

(g) Explain the term "Interrupt". [2 Marks]

(h) Mention two fundamental services provided by the OS to users. [2 Marks]

(i) Explain the core components of an OS. [10 Marks]

(j) Identify four components of a Computer System in the context of this course. [4 Marks]

SECTION B: ANSWER ANY TWO (2) QUESTION.

1. (a) In the context of Computer Science and Operating System, explain the term Process. [2 Marks]

   (b) i) Briefly describe various states that a process can be in. [4 Marks]

   ii) Identify and discuss the transitions and the events that can make a process transit from one state to the other. [6 Marks]

   (c) What are the differences and similarities between a process and a thread. [3 Marks]

2. (a) Explain the term Processor Scheduling. [2 Marks]

   (b) Describe the following scheduling algorithms

   - Non-Pre-Emptive, First Come, First Serve
   - Round Robin
   - Shortest Job First [5 Marks]

COLLEGE OF NATURAL AND APPLIED SCIENCES
DEPARTMENT OF MATHEMATICAL AND COMPUTER SCIENCES

CPS 206: OPERATING SYSTEMS I **Time Allowed: 45mins** 28/07/2022

INSTRUCTION(s): ATTEMPT ALL QUESTIONS

1. What do you understand by the following terms?
   i. Operating Systems (OS) ii. Kernel iii. Process iv. Context Switch.
2. Enumerate the various services rendered to the users by the OS. Describe the concept of co-operating processes and as well state reasons for allowing process co-operation.
3. How does the OS prevent a process from monopolizing a processor?
4. Describe the concept of co-operating processes and as well state reasons for allowing process co-operation
5. Enumerate at least three (3) events that could occur once a process is in running state.
6. In a tabular form, enumerate the differences between:
   i. Monolithic kernels and Microkernels
   ii. Time sharing OS and Real Time OS.
   iii. Process and Thread
   iv. Job scheduler and CPU scheduler
   v. Preemptive Scheduling and Non-preemptive Scheduling.