



National Open University of Nigeria
14/16 Ahmadu Bello Way, Victoria Island, Lagos.

School of Science and Technology

Course code: CIT 752

Course title: Operating System Concept

Credit unit: 2 credit units

Time: 2 ½ Hours

Instruction: Answer any four (5) questions. Each question carries 14marks.

1.
 - a. Define an Operating system (2 Marks)
 - b. List the contents of a Processing Control Block (PCB) (4 Marks)
 - c. Draw a well labelled diagram of a multiple producers and consumers scenario (8 Marks)
2.
 - a. What is a Virtual machine in computer science (2 Marks)
 - b. Briefly discuss an Interrupt Handler (3 Marks)
 - c. Draw a well labelled block diagram of a Simple Interrupt Process. (9 marks)
3.
 - a. What is debugging (1 Mark)
 - b. When do we say we have a Race Condition (1 Mark)
 - c. List 3 debugging techniques (3 Marks)
 - d. List two types of Fragmentation (2 Marks)
 - d. Briefly discuss the Producer/Consumer (P/C) Operation (7 marks)
4.
 - a. Briefly explain three types of Operating Systems with an example each. (6 Marks)
 - b. List the redefined problem of Process Management and briefly explain the procedures an operating system would employ to take care of the situation (8 Marks)
5.
 - a. Certain operating-system services provide functions which are helpful to the user. List and briefly discuss any four. (8 Marks)
 - b. Discuss any two of the following: (6 Marks)
 - First-Come, First-Served (FCFS)
 - Shortest Job First (SJF)
 - Shortest Remaining Time (SRT)
 - Multilevel Feedback Queue (MFQ)
6.
 - a. State two inherent draw backs of both forms of I/O (2 Marks)
 - b. List Three advantages and three disadvantages of demand paging (6 Marks)
 - b. Discuss:
 - CPU Protection (3 Marks)
 - I/O Protection (3 Marks)
7.
 - a. Briefly discuss any disk scheduling policy (2 Marks)
 - b. List and discuss three operating system functions which exist for ensuring the efficient operation of the system itself via resource sharing. (6 Marks)
 - c. Interrupts are provided primarily as a way to improve processor utilization. With interrupts, the processor can be engaged in executing other instructions while an I/O operation is in progress. Briefly discuss the steps CPU goes through handling an interrupt: (6 Marks)