



MASINDE MULIRO UNIVERSITY OF

SCIENCE AND TECHNOLOGY

(MMUST)

MAIN CAMPUS

UNIVERSITY EXAMINATIONS

MAIN EXAM

2021/2022 ACADEMIC YEAR

FIRST YEAR SECOND SEMESTER EXAMINATION

FOR THE DEGREE

OF

BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

COURSE CODE: BIT 123

COURSE TITLE: PLATFORM TECHNOLOGIES I

DATE: Tuesday 19/04/2022

TIME: 8:00a.m-10:00a.m

INSTRUCTIONS TO CANDIDATES:

SECTION A IS COMPULSORY. ANSWER ANY OTHER TWO QUESTIONS IN SECTION B

TIME: 2 Hours

MMUST observes ZERO tolerance to examination cheating

Paper Consists of 3 Printed Pages. Please Turn Over



SECTION A [COMPULSORY]: 30 MARKS

QUESTION 1

- a) Using a suitable diagram, define the term Operating System [4 MARKS]
- b) Discuss THREE types of schedulers [6 MARKS]
- c) Differentiate between spooling and context switching [4 MARKS]
- d) Using a diagram, Discuss THREE layers of input output software [6 MARKS]
- e) Discuss THREE components of Linux Operating System [6 MARKS]
- f) When a program is loaded into the memory it becomes a process and can be divided into four sections. Discuss [4 MARKS]

QUESTION TWO (20 marks)

- a) Differentiate between User-Level & Kernel-Level Thread [4 MARKS]
- b) Distinguish between Hard real-time systems and Soft Real-Time systems [4 MARKS]
- c) A Process Scheduler schedules different processes to be assigned to the CPU based on particular scheduling algorithms. Discuss six popular process scheduling algorithms in operating system [12 MARKS]

QUESTION THREE (20 marks)

- a) Using a diagram, Discuss THREE process scheduling queues [6 MARKS]
- b) Explain FOUR important functions of operating system and point out the activities in each function [4 MARKS]
- c) A computer program is a collection of instructions that performs a specific task when executed by a computer. When a process executes, it passes through different states. These stages may differ in different operating systems, and the names of these states are also not standardized.

With an aid of a clear diagram, Discuss FIVE states of a process

[10 MARKS]

QUESTION FOUR (20 marks)

- a) Differentiate between preemptive and non-preemptive algorithms in operating system scheduling **[4 MARKS]**
- b) Using a suitable diagram, differentiate between Batch processing, multitasking and multiprogramming **[6 MARKS]**
- c) If a computer program is run by an unauthorized user, then he/she may cause severe damage to computer or data stored in it. Therefore, a computer system must be protected against unauthorized access, malicious access to system memory, viruses and worms. Discuss FIVE ways to enhance security of operating software **[10 MARKS]**

QUESTION FIVE (20 marks)

- a) Operating system provides programs an environment to execute and allow users to execute programs in a convenient manner. Discuss FIVE services provided by an Operating system **[10 MARKS]**
- b) Operating systems were there from the very first computer generation and they keep evolving with time. Discuss FIVE types of operating systems which are commonly used today. **[10 MARKS]**