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**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

MAIN CAMPUS

UNIVERSITY EXAMINATIONS

SPECIAL/SUPPLIMENTARY 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 02-08-2022

TIME: 12-2P.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 2 Printed Pages. Please Turn Over



SECTION A [COMPULSORY]: 30 MARKS

QUESTION ONE

- a) Explain THREE main functions of operating system [6 MARKS]
- b) Describe the following scheduling algorithms [6 MARKS]
 - i. Shortest job first
 - ii. Non Pre-Emptive, First come First Serve
 - iii. Round Robin
- c) What is a critical region? How do they relate to controlling access to shared resources [3 Marks]
- d) What are TWO requirements of any solution to the critical section problem? [2 MARKS]
- e) Differentiate between spooling and context switching [4 Marks]
- f) Using a diagram, Discuss THREE layers of input output software [6 MARKS]
- g) Discuss THREE components of Linux Operating System [3 MARKS]

QUESTION TWO

- a) Describe various types of operating systems that are commonly used today in running daily activities. [10 MARKS]
- b) When a process executes, it passes through different states. Using a diagram, Explain FIVE states of a process [10 MARKS]

QUESTION THREE

- a) A computer system must be protected against unauthorized access, malicious access to system memory, viruses and worms. Explain FIVE ways to enhance security of operating software [10 MARKS]
- b) With an aid of a diagram, Explain THREE process scheduling queues [6 MARKS]
- c) What is the difference between Hard real-time systems and Soft Real-Time system [4 MARKS]

QUESTION FOUR

- a) Discuss six process scheduling algorithms in operating system [12 MARKS]
- b) Differentiate between pre-emptive and non-preemptive algorithms in operating system scheduling [4 Marks]

- c) Discuss FOUR operating system functions and explain the activities in each function
[4 MARKS]

QUESTION FIVE

- a) Using a suitable diagram, differentiate between Batch processing, multitasking and multiprogramming **[6 MARKS]**
- b) Differentiate between User-Level & Kernel-Level Thread **[4 MARKS]**
- c) 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]**