



## **MASENO UNIVERSITY**

### **UNIVERSITY EXAMINATIONS 2013/2014**

**FIRST YEAR SECOND SEMESTER EXAMINATIONS FOR THE  
DEGREE OF BACHELOR OF SCIENCE IN INFORMATION  
TECHNOLOGY**

**(MAIN CAMPUS)**

**CIT 110: PLATFORMS TECHNOLOGIES I**

*Date: 22<sup>nd</sup> July 2014*

*Time: 8.30 – 10.30 am*

#### **INSTRUCTIONS :**

- SECTION A: Attempt ALL questions in this section.
- SECTION B: Attempt ANY TWO questions .
- Write your registration number on all sheets of the answer book used.
- Use a NEW PAGE FOR EVERY QUESTION attempted, and indicate number on the space provided on the page of the answer sheet.
- Fasten together all loose answer sheet.
- NO mobile phones in the examination room.



**SECTION A: ANSWER ALL QUESTIONS**

**Question one (30 Marks)**

- a) Define the terms as used in computer operating systems
- i) Compaction (1 Marks)
  - ii) Spawning (1 Marks)
  - iii) Process Swapping (1 Marks)
  - iv) Process Deadlock (1 Marks)
- b) Differentiate between the following
- i) Internal and external memory fragmentation (2 Marks)
  - ii) File and Directory (2 Marks)
  - iii) Thread and Process (2 Marks)
  - iv) Shell and Kernel (2 Marks)
  - v) Blocked process and suspended process (2 Marks)
  - vi) Multiprocessor and Multitasking operating systems (2 Marks)
- c) State any **FOUR** factors that influence the choice of a file system (4 Marks)

**SECTION B: ANSWER ANY TWO QUESTIONS**

**QUESTION TWO (20 MARKS)**

- a) What is a Process Control Block? Discuss the roles of any **FIVE** elements found on the process control block **(11 Marks)**
- b) Using a suitable example of a re-usable resource, describe how a re-usable resource may cause deadlock **(9 Marks)**

**QUESTION THREE (20 MARKS)**

- a) Draw a **FIVE** state process model and describe each state and the causes of the transitions between the process various states **(10 Marks)**
- b) Discuss any **FIVE** likely causes of a process termination **(10 Marks)**

**QUESTION FOUR (20 MARKS)**

- a) Discuss deadlock recovery **(10 Marks)**
- b) Describe any **FIVE** functions of the operating system **(10 Marks)**

**QUESTION FIVE (20 MARKS)**

- a) What is memory partitioning? With the aid of suitable diagrams, describe the **TWO** main types of fixed memory partitioning and their weaknesses **(10 Marks)**
- b) Describe the Multitasking, Multiprogramming, Multithreading and Multiprocessing and defend the need for these technologies in modern computer systems **(10 Marks)**

**END OF EXAM**