



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

**UNIVERSITY EXAMINATIONS
2021 / 2022 ACADEMIC YEAR**

**END OF SEMESTER EXAMINATIONS
YEAR THREE SEMESTER TWO EXAMINATIONS
FOR THE DEGREE OF
BACHELOR OF SCIENCE
(INFORMATION TECHNOLOGY)**

COURSE CODE : BIT 321

**COURSE TITLE : SYSTEM ADMINISTRATION AND
MANAGEMENT**

DATE: 20/04/2022

TIME: 8:00-10:00AM

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTION ONE AND ANY OTHER TWO.

QUESTION ONE [30 MARKS]

- (a) (i) What is a system call *2 marks*
(ii) Give four examples of system calls *4 marks*
- (b) State and explain five principles that were applied to arrive at the seven layers of OSI Model *10 marks*
- (c) Briefly explain the term “FCAPS” as used in systems administration, highlighting the importance of each abbreviation. *6 marks*
- (d) State and briefly explain any four communication protocols operating at the Application layer of OSI. *8 marks*

QUESTION TWO [20 MARKS]

- (a) Differentiate between the two hackers, “white-hat” and “black-hat” *4 marks*
- (b) In reference to the role of system administration, state four factors that would distinguish between computer ethical issues and common human ethical undertaking *4 marks*
- (c) Give any three reasons/benefits of tracking a system usage. *6 marks*
- (d) State any three disadvantages of an open source software *6 mark*

QUESTION THREE [20 MARKS]

- (a) Define the following system management techniques as pertains to system administration. *12 marks*
- (i) Parallel task
 - (i) Serial execution
 - (ii) Shared Memory
 - (iii) Distributed Memory
 - (iv) Communications
- (b) Identify new features in Internet Protocol version 6 (IPv6) that differentiate it from Internet Protocol version 4 (IPv4) *8 marks*

QUESTION FOUR [20 MARKS]

- (a) Briefly explain the following terms as used in system management *8 marks*
- (i) Remote procedure call
 - (ii) Mutual exclusion
 - (iii) Concurrency
 - (iv) Firewall

- (b) Explain any two operating systems design issues that may be considered when designing distributed systems, *8 marks*
- (c) Define the essential difference between the following system processes.
- (i) Spooling *2 marks*
 - (ii) Buffering *2 marks*

QUESTION FIVE [20 MARKS]

- (a) Distinguish between *Clients computing* from any other form of distributed data processing. *4 marks*
- (b) Explain the concept of “thin-client” *5 marks*
- (c) Briefly explain the following terms on security as pertains to system performance *6 marks*
- (i) Confidentiality
 - (ii) Integrity
 - (iii) Availability
- (d) State any five features of *Windows Server 2008* *5 mark*