



**MURANG'A UNIVERSITY OF TECHNOLOGY**  
**SCHOOL OF COMPUTING AND INFORMATION TECHNOLOGY**  
**DEPARTMENT OF INFORMATION TECHNOLOGY**

**UNIVERSITY ORDINARY EXAMINATION**

**2023/2024 ACADEMIC YEAR**

**THIRD YEAR FIRST SEMESTER EXAMINATION**

**SIT:308 NETWORK SYSTEM ADMINISTRATION**

**DURATION: 2 HOURS**

**INSTRUCTIONS TO CANDIDATES:**

1. Answer question one and any other two questions.
2. Mobile phones are not allowed in the examination room.
3. You are not allowed to write on this examination question paper.

## **SECTION A – ANSWER ALL QUESTIONS IN THIS SECTION**

### **QUESTION ONE (30 MARKS)**

- a. Explain the meaning of the following terms (6 marks)
  - i. Network administration
  - ii. Network system administration
  - iii. System administration
- b. Outline three principles of network system administration (3 marks)
- c. Describe the three difference approaches used in DHCP to allocate IP addresses. (6 marks)
- d. Discuss the difference between
  - i. Linux and windows sever operating system
  - ii. Bandwidth and through put
- e. Explain each of the following terms. (6 marks)
  - i. Data networks
  - ii. Converged network
  - iii. VPN
- f. Describe the role of network administrator. (5marks)

## **SECTION B – ANSWER ANY TWO QUESTIONS IN THIS SECTION**

### **QUESTION TWO (20 MARKS)**

- a. Identify and explain the four organising components of active directory logical structure. (8 marks)
- b. Explain the term DNS and differentiate between primary and secondary zones. (6 marks)
- c. A server manager provides three basic methods of addressing remote server. Explain these methods. (6 marks)

### **QUESTION THREE (20 MARKS)**

- a. Describe the following terms as used in networking
  - i. Work station. (2 marks)
  - ii. Domain. (2 marks)
- b. Discuss the two major functions of active directory. (4 marks)
- c. DHCP has three main components. Define the term DHCP and describe each of the three components. (12 marks)

### **QUESTION FOUR (20 MARKS)**

- a. Discuss three benefits of VPNs. (3 marks)
- b. As a network administrator, you have been encountering problems with your network mainly due to congestion being caused by collisions and retransmission. You have been advised to segment your network. Explain what is involved in network segmentation. Why is it important? (8 marks)
- c. Mambo Leo company was contracted to gather information in connection to establishing a new network for Kusema Kweli organisation. State any two methods that could be adopted in the information gathering process and explain the importance of documenting the work. (6 marks)
- d. Differentiate between straight through and cross over cables in networking. (3 marks)