



UNIVERSITY EXAMINATIONS

FIRST SEMESTER 2025/2026 ACADEMIC YEAR

**FOURTH YEAR EXAMINATION FOR THE DEGREE OF
BACHELOR OF SCIENCE IN INFORMATION
COMMUNICATION AND TECHNOLOGY**

BICT 411: NETWORK AND SYSTEM ADMINISTRATION II

STREAM: R

TIME: 2 HRS

DAY: WEDNESDAY [14.30 – 16.30 P.M]

DATE: 04/02/2026

THIS QUESTION PAPER CONSISTS OF THREE (3) PAGES

PLEASE DO NOT OPEN UNTIL THE INVIGILATOR SAYS SO.

INSTRUCTIONS: Section A is compulsory and has **30 marks**.

Attempt any TWO questions from Section B. Each question has **20 marks**.

Section A – 30 marks (Answer all questions)

QUESTION ONE (30 MARKS)

- a) Briefly discuss the top most principles that guide network and system administrators **(3 Marks)**
- b) Giving at least **TWO** examples for each distinguish between guided and unguided network media **(4 Marks)**
- c) What is the role of the following in windows server administration? **(8 Marks)**
 - i. Active directory
 - ii. Trees
 - iii. Forests
 - iv. Domain
- d) Discuss the difference between the two network architecture the OSI and the TCP/IP reference models **(4 Marks)**
- e) Discuss the difference between a peer to peer and a server client based network **(4 Marks)**
- f) Distinguish between star and mesh topologies **(4 Marks)**
- g) Briefly discuss how switches are used to manage broadcast domains **(3 Marks)**

SECTION B – 40 MARKS (ANSWER ANY TWO QUESTIONS)

QUESTION TWO (20 MARKS)

- (a) Discuss the advantage of Using NAT in network addressing **(3 Marks)**
- (b) What are the **TWO** key shortcomings of IPV4 that IPV6 is set to address **(4 Marks)**
- (c) Describe **FOUR** different types of network security adopted by network administrators **(4 Marks)**
- (d) Highlight and discuss **THREE** key elements of an operating system. **(9 Marks)**

QUESTION THREE (20 MARKS)

- (a) Explain the function of Host and broadcast addresses (4 Marks)
- (b) Give details of the importance of DNS and its impact if it is wrongly configured or un-configured in a computer network (5 Marks)
- (c) How is a network packet from a single host computer prevented from spreading randomly all over the planet? How is such a packet still able to reach a specified location on the other side of the planet? (5 Marks)
- (d) Discuss the features of the peer to peer and Server Client distributed system architectures (6 Marks)

QUESTION FOUR (20 MARKS)

- (a) Under what circumstances is it desirable to use a graphical user interface (GUI), and when is it better to use a command language to address a computer? (4 Marks)
- (b) What is the main disadvantage of using a network File system? (4 Marks)
- (c) Explain the pros and cons of centralization versus delegation in a system (4 Marks)
- (d) What is meant by a name service? Name two widely used name services that contain IP addresses and one that contains Ethernet addresses. (4 Marks)
- (e) In what way is using a name service better than using static host tables? In what way is it worse (4 Marks)

QUESTION FIVE (20 MARKS)

- (a) How do start-up and shutdown procedures differ between Unix and Windows? (4 Marks)
- (b) Distinguish between disk partitioning and disk formatting. Explain their importance. (5 Marks)
- (c) What is meant by host cloning? Explain how you would go about cloning a Unix-like and Windows host. (5 Marks)
- (d) Discuss **THREE** reasons that may lead to implementation of a distributed file system (6 Marks)