



NATIONAL OPEN UNIVERSITY OF NIGERIA
University Village, 91 Cadastral Zone, Nnamdi Azikwe Expressway, Jabi, Abuja
FACULTY OF SCIENCES
COMPUTER SCIENCE DEPARTMENT
2021_1 EXAMINATIONS ...

CIT465 – Network Administration **Credit:** 2 units

TIME ALLOWED: 2 Hours

INSTRUCTION: Answer Question 1 and any other THREE (3) Questions

QUESTIONS

- 1a) For 4 devices in a network, what is the number of cable links required for each of the following topologies: i. Mesh ii. Ring and iii. Bus (4 ½ marks)
- 1b) Define communication protocol. List the elements of a communication protocol (4 ½ marks)
- 1c) What do you understand by Network Address Translation, and what is its main purpose? (5 marks)
- 1d) Explain the basic tools used for testing network connectivity. Outline other related services rendered by these tools (4 marks)
- 1e) Discuss the various ways to shut down a UNIX system (7 marks)
- 2a) Explain any 6 responsibilities of a network administrator (9 marks)
- 2b) State the advantages and disadvantages of the following network topologies
- i. Bus (2 marks)
 - ii. Star (2 marks)
 - iii. Ring (2 marks)
- 3a) Outline any 6 challenges of system administration (9 marks)
- 3b) Summarize the functionalities of the transport layer of the 4 - layer TCP/IP communication model (6 marks)
- 4a) In a tabular form, differentiate between IPv4 and IPv6 (8 marks)
- 4b) Define MAC address (2 marks). Explain the services responsible for the following:
- i. Relating Internet Domain Names to IP addresses (1 mark)
 - ii. Translating IP addresses to MAC addresses (1 mark)
 - iii. Translating MAC addresses to IP addresses (1 mark)
- 4c) What do you understand by dual-homed host? (2 marks)

5a) Illustrate the OSI reference communication model (*7 ½ marks*)

5b) Summarize the functionalities of the Network Interface layer of the TCP/IP model (*7 ½ marks*)