NATIONAL OPEN UNIVERSITY OF NIGERIA
University Village, 91 Cadastral Zone, Nnamdi Azikwe Expressway, Jabi, Abuja
FACULTY OF SCIENCES
COMPUTER SCIENCE DEPARTMENT ₍ₐₘ₎
2020_2 EXAMINATIONS

CIT 465 - Network Administration   **Credit:** 2 units

TIME ALLOWED: 2 Hours

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

1a) For four devices in a network, what is the number of cable links required for each of the following topologies:

 i. Mesh   ii. Ring   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 six responsibilities of the 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 eight challenges of system administration *(8 marks)*
3b)Summarize the functionalities of the transport layer of the 4 - layer TCP/IP communication model *(7 marks)*

4a)List the OSI reference communication model in the correct sequence *(4 marks)*
4b) Summarize the functionalities of the Network Interface layer of the TCP/IP model *(4 marks)*
4c. Identify the likely causes of network services suddenly becoming unavailable *(4 marks)*
4d. Outline the basic features of a firewall *(3 marks)*

5a)Differentiate between IPv4 and IPv6 *(4 marks)*
5b) Define MAC address *(2 marks)***.**

5c) 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)*

5d) What do you understand by dual-homed host? *(2 marks)*

5e) Describe any two categories of security threats to a system *(3 marks)*

5f) When you are working on a UNIX system and the disk becomes full, identify two main things to look out for *(1 mark)*