



(Knowledge for Development)

KIBABII UNIVERSITY

(KIBU)

**UNIVERSITY EXAMINATIONS
2018/2019 ACADEMIC YEAR**

**MAIN EXAMINATIONS
YEAR TWO SEMESTER TWO EXAMINATIONS
FOR DEGREE OF BACHELOR OF SCIENCE IN
INFORMATION TECHNOLOGY**

COURSE CODE : BIT 223

**COURSE TITLE : NETWORK ADMINISTRATION
AND MANAGEMENT**

DATE: 22ND MAY 2019

TIME: 2.00 P.M. – 4.00 P.M.

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTIONS ONE AND ANY OTHER TWO.

QUESTION ONE (COMPULSARY) [30 MARKS]

- a) Define the following terms as used in Networks: -
- | | | |
|----------------------------|-----------------|-----------|
| i.) Network Administration | iii.) Windowing | |
| ii.) Network security | iv.) daemon | [4 Marks] |
- b) Differentiate between Kb and KB as used in Computer networks [2 Marks]
- c) In the TCP/IP Protocol suite, define the functions of the individual TCP and IP protocols respectively [4 Marks]
- d) State the roles of a network administrator in an organization [6 Marks]
- e) Stating an advantage and a disadvantage in each case, discuss the FOUR network topologies [8 Marks]
- f) Compare and contrast between the following as used in networking:-
- | | |
|--|-----------|
| i) Straight through and Crossover network cables | |
| ii) Bridge and router | |
| iii) Token ring and Mesh network topologies | [6 Marks] |

QUESTION TWO [20 MARKS] ✓

Given the information; 00:43: AB: F2: 32: 13;

- a) Define the term MAC address [2 Marks]
- b) Describe the content in the information given. [2 Marks]
- c) In which layer of the OSI model does the address operate? [2 Marks]
- d) Describe the drawbacks of the address. [3 Marks]
- e) Using a suitable example, differentiate between a physical and a logical address [6 Marks]
- f) Explain the functions of the IP address in layer 3 of the OSI model. [2 Marks]
- g) Giving reasons, which of the following Host IP Address is invalid [3 Marks]
- Host A: 172.16.0.100 255.0.255.0 Host B: 172.26.0.101 255.255.0.0

QUESTION THREE [20 MARKS]

- a) Define IP Address [2 Marks]
- b) Explain the importance of subnet masks [2 Marks]
- c) Briefly explain how the introduction of subnet masks in networks addressed the shortcomings of IP addressing [5 Marks]
- d) Briefly explain how subnetting addressed the challenges of requests of registered numbers by private organizational network administrators to gain access to the internet while managing their own private networks [5 Marks]
- e) Describe three ways in which subnetting is beneficial. [6 Marks]

✓ QUESTION FOUR [20 MARKS]

- a) Define network security [1 Marks]

- b) Explain factors network administrators need to consider when designing networks. [3 Marks]
- c) Explain **THREE** ways in which network security can be compromised. [3 Marks]
- d) In what ways can the network administrator mitigate against network threats? [3 Marks]
- e) When it comes to policy as a vulnerability to network security, what elements does the management tend to ignore hence rendering network resources insecure? [5 Marks]
- f) Explain the common configuration issues that management needs to grapple with as it tries to enforce network security. [5 Marks]

QUESTION FIVE [20 MARKS]

- a) Describe three ways in which subnetting is beneficial. [6 Marks]
- b) Describe **FOUR** key considerations a network administrator need to put in mind when creating an organizations network. [4 Marks]
- c) The I.T Department of Kibabii University has been assigned the network number 172.16.5.0/24 by the system administrator and needs to define three subnets for its computer labs. The largest subnet is required to support 5 hosts. You as a consultant network administrator are required to define the subnet masks for the network. [10 Marks]