



MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS 2018/2019 ACADEMIC YEAR SECOND YEAR SECOND SEMESTER

SCHOOL OF SCIENCE BACHELOR OF SCIENCE (COMPUTER SCIENCES)

**COURSE CODE: COM 2206
COURSE TITLE: DATA COMMUNICATION
NETWORK**

DATE: 26TH APRIL, 2019

TIME: 11:00 - 13:00HRS

INSTRUCTIONS TO CANDIDATES

Answer Question **ONE** and any other **TWO** questions

This paper consists of 3 printed pages. Please turn over.

SECTION A (30 Marks): Answer all questions from this section

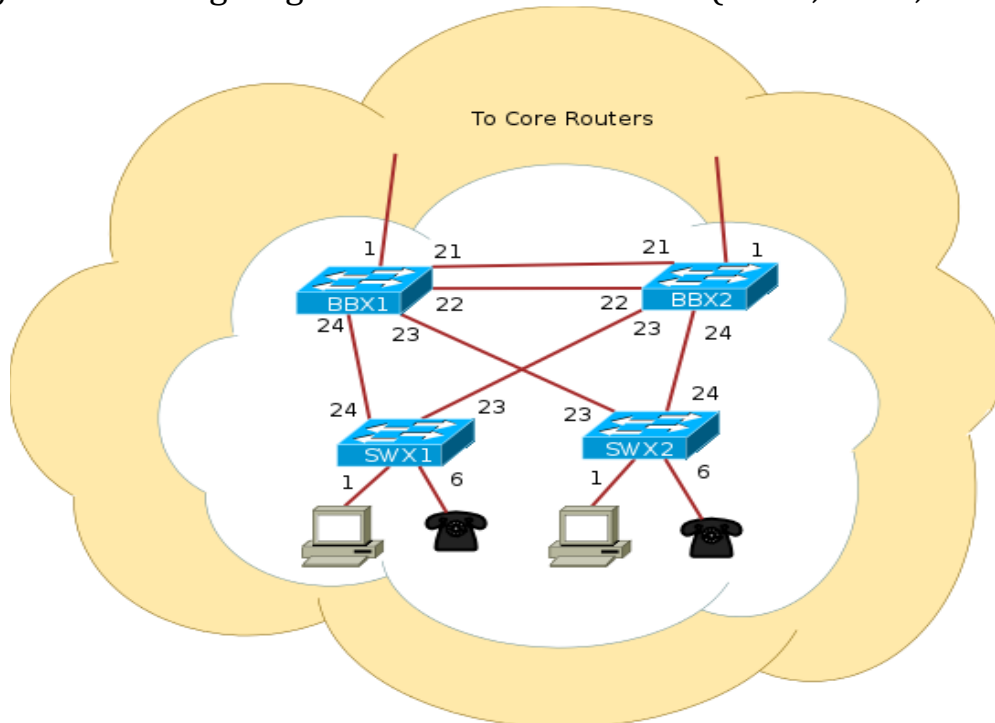
QUESTION 1

- (a) State and briefly explain three tools for finding errors in a network **(3 Marks)**
- (b) Large networks are built by applying routing between nodes. State and explain three ways of doing this. **(6 Marks)**
- (c) Give four disadvantages of installing a network **(4 Marks)**
- (d) Give three disadvantages of fiber optic cables **(3 Marks)**
- (e) Explain the importance of Network Address Translation (NAT) **(3 Marks)**
- (f) Given the network address 132.21.0.0, find the class, the block, and the range of the addresses **(3 Marks)**
- (g) Explain the importance of penetration tests to an organization **(3 Marks)**
- (h) What is the difference between a network ID and a host ID **(2 Marks)**
- (i) State three Penetration Testing Tools **(3 Marks)**

SECTION B (40 Marks): Answer any two questions from this section.

QUESTION 2

- (a) The following diagram shows four switches (BBX1, BBX2, SWX1 and SWX2)



Write the commands to perform the following operations on each of the switches **(10 Marks)**

- i) Clear all configurations on the switches
 - ii) Name the switches
 - iii) Configure Authentication
 - iv) Assign each switch a different IP address
 - v) Configure Virtual LAN (VLAN)
- (b) A good network design is modular and hierarchical, with a clear separation of functions explain **(4 Marks)**
- (c) Discuss the following Media Access Control Methods **(6 Marks)**
- i) TDMA
 - ii) CSMA/CD
 - iii) Demand Priority

QUESTION 3

- (a) A company is granted the site address 201.70.64.0 (class C). The company needs six subnets. Design the subnets **(5 Marks)**
- (b) Explain the security measures that can be used to protect users and wireless Networks **(5 Marks)**
- (c) In designing a LAN for an organization explain five most important things you'll put into consideration **(5 Marks)**
- (d) Give five main features to consider when selecting a Network Operating System **(5 Marks)**

QUESTION 4

- (a) Find the class of the following addresses **(2 Marks)**
- i) 158.223.1.108
 - ii) 227.13.14.88
- (b) Explain four considerations when choosing a topology **(4 Marks)**
- (c) Explain any three network protocols **(6 Marks)**
- (d) Explain the steps used to design and implement a new network **(8 Marks)**

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