

KABARAK



UNIVERSITY

EXAMINATIONS

2008/2009 ACADEMIC YEAR

**FOR THE DEGREE OF BACHELOR OF BUSINESS MANAGEMENT
& INFORMATION TECHNOLOGY**

COURSE CODE: BMIT 217

**COURSE TITLE: COMPUTER NETWORKS AND
COMMUNICATIONS TECHNOLOGY**

STREAM: Y2S1

DAY: MONDAY

TIME: 9.00 – 12.00 P.M.

DATE: 10/08/2009

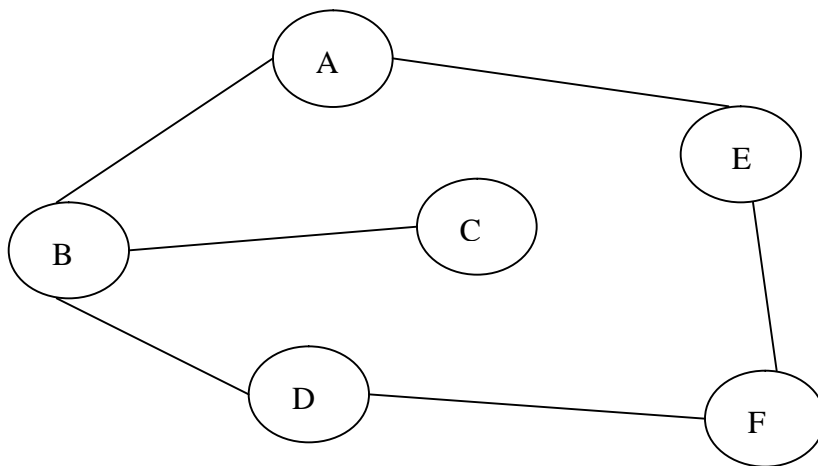
INSTRUCTIONS:

- 1. This question paper has six questions**
- 2. Answer question one and any other three questions**

PLEASE TURN OVER

QUESTION ONE (40 MARKS) COMPULSORY

- (a) Explain the meaning of following terms
- Firewall
 - ISDN
 - Boot ROM
 - 10Base5
 - ASCII
- (10mks)
- (b) Distinguish between
- Bluetooth and Wi-Fi
 - Data encryption and data decryption
 - Workgroup and domain
- (6mks)
- (c) For efficient largely trouble free networks, the following “5-4-3” rule is usually applied. Explain this rule
- (3mks)
- (d) For each of the following IP addresses: 172.18.172.18 and 192.168.1.10
- Identify the network class, network id, host id and correct sub netting
 - Convert 172, 192 and 168 parts to binary number system
- (4mks)
(6mks)
- (e) Among the main three types of network topologies, star is a popular and widely used topology in LANs. Explain **four** reasons why you think so.
- (4mks)
- (f) List and explain **three** types of information that a routing table contains
- (3mks)
- (g) Draw a routing table for node C from the following network model for destinations A, B, D and E
- (4mks)



QUESTION TWO (20 MARKS) ELECTIVE

(a) With the aid of a wave diagram, explain the distinction between *pulse* and *cycle* as used in digital signals in data transmission? (3mks)

(b) Explain the importance of the following factors in computer networking

- i. Bandwidth
- ii. Synchronous and asynchronous transmission modes
- iii. Multiplexing (6mks)

(c) Describe the three types of signal flaws giving the remedies of each (6mks)

(d) The line below is a message sent over a network:

A network or communications network is a system of interconnected computers, telephones lines or other communication devices to communicate and share applications and data. Data transferred include; Voice, Sound, Image, Video and Text.

How long does it take to download this message using a 56k Modem if the system has a system delay of 2 milliseconds? (5mks)

QUESTION THREE (20 MARKS) ELECTIVE

(a) Differentiate between interior and exterior routers (3mks)

(b) Give five functions of a Network Operating System (5mks)

(c) Kabarak University wishes to establish a computer network across its three campuses spread over Nakuru, Kericho and Eldoret towns to provide online learning to its students. As a network expert, advice the institution on the following network issues giving reasons for each.

i. The most suitable network type among LAN, MAN and WAN (4mks)

ii. At least four network hardware components needed to establish the network (4mks)

iii. At least four software required for both the institution and the clients (students) (4mks)

QUESTION FOUR (20 MARKS) ELECTIVE

(a) Before installation of a Network Operating System (NOS), one has to plan for the installation. Why should you do so? (2mks)

(b) List four factors that must be considered before installing an NOS (2mks)

- (c) During a network practical session a student set up a network of two computers by connecting them using a straight through cable.
- i. Describe how you can practically test that the computers can or cannot communicate (3mks)
 - ii. Do you think that the two computers communicated? Explain (3mks)
- (d) Describe how a crossover patch end cable is made (10mks)

QUESTION FIVE (20 MARKS) ELECTIVE

- (a) List six network issues that prompted ISO develop the OSI reference model (3mks)
- (b) Illustrate the difference between TCP/IP and OSI reference model layer systems (5mks)
- (c) Describe the transport layer of the OSI (4mks)
- (d) For each of these four network issues: DHCP, NetBIOS, CSMA/CD and FDDI,
- i. Write their names in full (2mks)
 - ii. Explain their functions in networking (4mks)
 - iii. State the OSI reference model layer they operate at (2mks)