KENYA METHODIST UNIVERSITY

FIRST TRIMESTER EXAMINATION, APRIL 2008

DEPARTMENT	**:**	**COMPUTER AND INFORMATION SCIENCE**
COURSE CODE	**:**	**CISY 356**
COURSE TITLE	**:**	**PRINCIPLES OF TELECOMMUNICATIONS II**
TIME	**:**	**2 HOURS**

Instructions:

Answer ALL questions in Section A and any other TWO questions in Section B.

Section A (30 Marks)

1. Briefly describe the following components of the telephone system:

    a.   End office.

    b.   Trunk.   (3 mks)

2. State the two common types of dedicated-circuit networks.   (2 mks)

3. Briefly explain why data communication rates over the traditional local loop are low.   (2 mks)

4. Briefly describe the two types of ISDN   (3 mks)

5. Briefly describe the following issues in mobile telephone systems:

    a.   Handoffs

    b.   Frequency reuse.   (5 mks)

6. With the help of a diagram, describe the modern network design process.   (5 mks)

7. Define network management.   (2 mks)

8. State the three types of network management software.   (3 mks)

9. Briefly describe the following:

    a.   Voice over Internet Protocol (VoIP)

    b.   Wireless Application Protocol (WAP)   (5 mks)

Section B

Question One (20 Marks)

1. State any two key components of the DSL architecture.   (2 mks)

2. ADSL uses FDM to create three separate channels over the phone circuit. Briefly describe these three

    channels.   (3 mks)

3. What is Mobile Assisted Handoff?   (2 mks)

4. Briefly describe Virtual Private Networks (VPN)   (2 mks)

5. State two advantages and one advantage of using VPNs. (3 mks)

6. Briefly describe the CDMA technology for 2nd generation mobile telephone services. (3 mks)

7. Distinguish between performance management and fault management. (2 mks)

8. Define configuration management, and state one solution to the configuration problem. (3 mks)

Question Two (20 Marks)

1. Briefly describe the two alternatives to DSL, in the implementation of local loops. (5 mks)

2. Briefly describe the following 3rd generation mobile telephone technologies:

   a. EDGE

   b. GPRS (4 mks)

3. What is soft handoff? (1 mk)

4. Distinguish between logical network design and physical network design. (2 mks)

5. State the three aspects of technology design. (3 mks)

6. Define Advanced Intelligent Networks (AIN). (2 mks)

7. Briefly describe the passive optical networks technology. (3 mks)

Question Three (20 Marks)

1. Distinguish between the Fiber Distributed Data Interface (FDDI) and the Copper Distributed Data Interface (CDDI). (2 mks)

2. State any three types of packet switched network services. (3 mks)

3. Define cost assessment as used in network design. (2 mks)

4. Outline three deliverables in cost assessment. (3 mks)

5. Define wireless LAN. (2 mks)

6. Briefly describe the following wireless LAN technologies:

   a. Infrared wireless LAN

   b. Bluetooth (3 mks)

7. Problem resolution is a key aspect of end-user support. State the three levels of the problem resolution process. (3 mks)

8. Distinguish between total cost of ownership (TCO) and network cost of ownership (NCO). (2 mks)