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University Examinations 2023/2024

FIRST YEAR, FIRST SEMESTER EXAMINATION FOR THE DIPLOMA IN INFORMATION
TECHNOLOGY

CIT 2110: NETWORKING ESSENTIAL

DATE: APRIL 2024   **TIME: 1¹/2 HOURS**

INSTRUCTIONS:

1. Answer Question ONE, and any other TWO

QUESTION ONE (30 MARKS)

1. Define the following terms as used and applied in the networking and networking essentials.

(4mks)

    i.   A backbone

    ii.   Transmission Media

    iii.   Node

    iv.   Link

2. The desire to download and upload large data packages at high speeds calls for the hardware and the backbone itself. Discuss (4mks)

3. Differentiate between the following:

    i.   Server based network and peer to peer network   (2mks)

    ii.   A topology and a terminator   (2mks)

    iii.   Multiplexing and De-multiplexing   (2mks)

    iv.   Circuit switching and Packet switching   (2mks)

4. Give three examples of guided media in transmission   (3mks)

5. What are the advantages of fiber optic cables over the coaxial cables   (2 mks)

6. What are the risks a network faces from the internet today?   (4mks)

7. Differentiate between the following terms: (4mks)

    i.   Synchronous vs Asynchronous TDM.

    ii.   Unguided media vs Guided media

8. Define wireless connectivity   (1mk)

QUESTION TWO [15 MARKS]

1. Define a Network Operating System   (1mks)

    List the advantages of a networked environment   (4mks)

2. Draw as a means of description showing various topologies on the same supply brief
    explanation of how each works

                                                                                (6mks)

3. Differentiate between the multiuser and multitasking   (4mks)

QUESTION THREE [15 MARKS]

1.   Define TCP   (2mks)

     i.   Draw a well labeled diagram showing the layers of the TCP/IP protocol   (4mks)

2. Describe the term multiplexing   (2mks)

3. Differentiate between the following terms showing their application   (4mks)

    i.   Serial Transmission and Parallel Transmission

4. Discuss the following: (2 marks)

    i.   Channel

    ii.   Baud Rate

QUESTION FOUR [15 MARKS]

1. You are required to network a cyber-shop. Differentiate between the networking devices and internetworking devices you are going to use, giving examples where necessary.   (2mks)

2. a. Differentiate between the following terms   (4mks)

   i.   Simplex and Full Duplex transmission
   ii.   Synchronous and Asynchronous Transmission

3. Use drawings to show the difference between full duplex and half duplex transmissions
                                                                              (4mks)

4. a. Describe networking architecture   (1mk)
5. Explain what the following networking devices does.   (3mks)
   i.   The switch
   ii.   The hub
   iii.   The repeater