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**University Examinations 2014/2015**

STAGE 3 EXAMINATION FOR DIPLOMA IN INFORMATION TECHNOLOGY

**CIT 2226: NETWORK ESSENTIALS**

**DATE: APRIL 2015 TIME: 11/2 HOURS**

**INSTRUCTIONS:** *Answer question* ***one*** *and any other* ***two*** *questions*

**QUESTION ONE (30 MARKS)**

1. Define the following terms, giving an example for each:
2. Computer network
3. Topology
4. Node (6 Marks)
5. With the help of a diagram, draw a well labeled diagram of a star topology. Provide two advantages and two disadvantages of this topology (6 Marks)
6. Define the following terms as used in computer networks:
7. Local Area Network
8. Protocol
9. Network adapter card (6 Marks)
10. Differentiate between Untwisted Pair (UTP) and Shielded Twisted Pair (STP) (4 Marks)
11. Distinguish between asynchronous and synchronous data transmission (4 Marks)
12. What is a Network Operating System? Give two examples of network operating systems you know (4 Marks)

**QUESTION TWO (15 MARKS)**

1. Define the term network topology. Give three examples (4 Marks)
2. Differentiate between the terms CSMA/CD and CSMA/CA as used in computer networks

(4 Marks)

1. What is a network interface card? Give three features that must be considered when choosing a network interface card (4 Marks)
2. List four types of network cables you know (3 Marks)

**QUESTION THREE (15 MARKS)**

1. Define a repeater (2 Marks)
2. What is the difference between an active hub and a passive hub (2 Marks)
3. Define the following terms as used in computer networks:
4. Local Area Network (2 Marks)
5. Wide Area Network (2 Marks)
6. Metropolitan Area Network (2 Marks)
7. Personal Area Network (2 Marks)
8. What is a router? Give one of its advantages over a bridge (3 Marks)

**QUESTION FOUR (15 MARKS)**

1. Define the term fiber optic (2 Marks)
2. What is the advantage of using shielding on data transmission cables (2 Marks)
3. Give any three types of network topologies with an example for each (5 Marks)
4. What is the difference between a MAN and a LAN (2 Marks)
5. With the help of a diagram, illustrate a ring topology. Give one advantage of this topology

(4 Marks)