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**KIRIRI WOMEN'S UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATION, 2023/2024 ACADEMIC YEAR
FIRST YEAR, FOURTH SEMESTER EXAMINATION
FOR THE DIPLOMA IN BUSINESS INFORMATION TECHNOLOGY
DIT 1010 – DATA COMMUNICATION AND NETWORKING**

Date: 10TH AUGUST 2023
Time: 11:30AM – 1:30PM

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS

QUESTION ONE (30 MARKS)

- a) Outline major applications of communication and computer networks. (8 Marks)
- b) Explain the following terminologies as applied in networking; (4 Marks)
- Internet
 - Inter-Connectivity
- c) Generally, networks are distinguished based on their geographical span. (6 Marks)
- Explain network types based on network size.
 - Explain network types based on point of control.
- d) State and explain the four guided Transmission Media over which communication takes place in computer networks. (8 Marks)

QUESTION TWO (20 MARKS)

- a) State and explain FOUR main Local Area Network (LAN) technologies. (8 Marks)
- b) Distinguish between the following Network topologies; (6 Marks)
- Point-to-Point and Bus Topology
 - Star Topology and Bus Topology

QUESTION THREE (20 MARKS)

- a) Discuss the four different types of wireless transmission used to transfer data in computer Networks. (8 Marks)
- b) Briefly explain the term Multiplexing as applied in data Transmission. (4 Marks)
- c) Differentiate between frequency division and time division multiplexing. (8 Marks)

QUESTION FOUR (20 MARKS)

- a) In digital transmission, digital data is converted into signals. Explain two ways used to convert digital data to digital signals. (6 Marks)
- b) Outline four digital Transmission modes that decide how data is transmitted between two computers. (8 Marks)

Marks)

- c) Describe three kinds of digital-to-analog conversions. (6

Marks)

QUESTION FIVE (20 MARKS)

- a) Routing between two networks is called internetworking: Describe various networking categories. (6

Marks)

- b) Explain three cryptographic algorithms currently used to secure data over computer networks. (6

Marks)

- c) Discuss the various Open System Interconnect model layers. (8

Marks)