



(Knowledge for Development)

# **KIBABII UNIVERSITY (KIBU)**

**MAIN CAMPUS**

**UNIVERSITY EXAMINATIONS**

**2021/2022 ACADEMIC YEAR**

**END OF SEMESTER EXAMINATION**

**SECOND YEAR FIRST SEMESTER EXAMINATION**

**FOR THE DIPLOMA IN**

**(INFORMATION TECHNOLOGY)**

**COURSE CODE: DIT 060**

**COURSE TITLE: DATA COMMUNICATION NETWORKS**

**DATE: 07/09/2022 TIME: 09.00 A.M. – 11.00 A.M. 2HRS**

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**INSTRUCTIONS TO CANDIDATES:**

**ANSWER QUESTIONS ONE AND ANY OTHER TWO.**

Paper Consists of 2 Printed Pages. Please Turn Over ➔

**QUESTION ONE (24 MARKS) - COMPULSORY**

- a. State and explain any three forms in which data can be represented (6mks)
- b. Using a well labelled diagram discuss the components of data communication (10mks)
- c. State and explain the four fundamental characteristics of data communication (8mks)

**QUESTION TWO (18 MARKS)**

- a. State and explain ways in which data flow between two devices (8mks)
- b. Explain three key elements of a protocol (6mks)
- c. Differentiate between data and information as used in communication (4mks)

**QUESTION THREE (18 MARKS)**

- a. Using a diagram differentiate between analog and digital signals (4mks)
- b. State and explain four characteristics of analog signal (8mks)
- c. Describe what is a composite signal (4mks)

**QUESTION FOUR (18 MARKS)**

- a. Draw the OSI model and state the function of each layer (10mks)
- b. Discuss any four types of computer networks according to their geographical location (8mks)

**QUESTION FIVE (18 MARKS)**

- a. State and explain the three categories of errors in signal transmission (6mks)
- b. Define what is signal modulation and discuss three ways of analog signal modulation (8mks)
- c. Briefly discuss data transmission modes (4mks)