



## GARISSA UNIVERSITY

UNIVERSITY EXAMINATION **2017/2018** ACADEMIC YEAR **ONE**  
**THIRD** SEMESTER EXAMINATION

SCHOOL OF BIOLOGICAL AND PHYSICAL SCIENCE  
FOR THE DIPLOMA IN INFORMATION TECHNOLOGY

**COURSE CODE: DIT 022**

**COURSE TITLE: DATA COMMUNICATIONS AND NETWORKS II**

**EXAMINATION DURATION: 2 HOURS**

**DATE: 08/08/18**

**TIME: 9.00-11.00 AM**

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### INSTRUCTION TO CANDIDATES

- The examination has **SIX (6)** questions
- Question **ONE (1)** is **COMPULSORY**
- Choose any other **THREE (3)** questions from the remaining **FIVE (5)** questions
- Use sketch diagrams to illustrate your answer whenever necessary
- Do not carry mobile phones or any other written materials in examination room
- Do not write on this paper

This paper consists of **TWO (2)** printed pages

*please turn over*



### QUESTION ONE (COMPULSORY)

- i. Describe **FIVE** physical topologies using diagrams [20 Marks]
- ii. State **THREE** characteristics of *Wi-Fi* as a type of LAN [3 Marks]
- iii. List **TWO** types of broadcast networks [2 Marks]

### QUESTION TWO

- a. Using a well labelled diagram, describe the following types of network architecture
  - i. *Client/server architecture* [5 Marks]
  - ii. *Peer-to-peer architecture* [5 Marks]
- b. State **THREE** advantages of *peer-to-peer architecture* [3 Marks]
- c. Distinguish between *Bluetooth* and *Xender* based on data transmission mode [2 Marks]

### QUESTION THREE

- i. Describe the following types of networks
  - a. *MAN* [2 Marks]
  - b. *WAN* [2 Marks]
- ii. Describe the following connecting devices
  - a. Bridge [2 Marks]
  - b. Switch [2 Marks]
  - c. Repeater [2 Marks]
  - d. Router [2 Marks]
  - e. Hub [2 Marks]
- iii. State one characteristic of LAN [1 Mark]

### QUESTION FOUR

- i. Define *Internet* [2 Marks]
- ii. Discuss **TWO** role of internet in data communication [4 Marks]
- iii. State **FIVE** factors that have contributed to increased growth of internet [5 Marks]
- iv. List four components of a typical frame used to transmit a character in asynchronous communication [4 Marks]

### QUESTION FIVE

- a. State **TWO** classifications of networks based on *transmission technology* [4 Marks]
- b. Describe **FOUR** major applications of computer networks [8 Marks]
- c. State **THREE** functions of the *transport layer* in the TCP/IP model [3 Marks]

### QUESTION SIX

- a. Give **TWO** characteristics of *Local Area Networks* [2 Marks]
- b. State **FOUR** features of *Bluetooth* as LAN tool for data communication [4 Marks]
- c. Explain **FIVE** characteristics of classifying networks [10 Marks]
- d. State **FOUR** goals and motivations of a network [8 Marks]
- e. What is a *Metropolitan Area Network* [1 Mark]

