



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

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]

