



GARISSA UNIVERSITY

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

SCHOOL OF COMPUTER AND INFORMATION SCIENCE
FOR THE DIPLOMA INFORMATION TECHNOLOGY

COURSE CODE: DIT 022

COURSE TITLE: DATA COMMUNICATIONS AND NETWORKS II

EXAMINATION DURATION: 3 HOURS

DATE: 11/04/18

TIME: 09.00-12.00 PM

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)

- 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)

QUESTION TWO

- 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 THREE

- 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 *serial communication* and *parallel communication* (2 marks)

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

- i. Describe the following types of networks
 - a. *Packet switched networks* (2 marks)
 - b. *Circuit switched networks* (2 marks)
- ii. Describe **FIVE** connecting devices (10 marks)
- iii. State one characteristic of **LAN** (1 mark)

QUESTION SIX

- i. Describe **FIVE** physical topologies using diagrams (10 marks)
- ii. State **THREE** characteristics of *Wi-Fi* as a type of **LAN** (3 marks)
- iii. List **TWO** types of broadcast networks (2 marks)

