



GARISSA UNIVERSITY

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

SCHOOL OF COMPUTER AND INFORMATION SCIENCE
FOR THE DIPLOMA IN INFORMATION TECHNOLOGY

COURSE CODE: DIT 004

COURSE TITLE: DATA COMMUNICATIONS AND NETWORKS I

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) (a) Define Data Communication standards [2 marks]
- (b) Describe **TWO** categories of standards used in Data Communication [4 marks]
- (c) Briefly describe the concept of *data communications* giving examples of software applications used for data communications [4 marks]
- (b) Describe **FIVE** components of data communication system using well-labeled Diagrams. [15 marks]

QUESTION TWO

- (a) Describe **THREE** modes of data transmission using well-labeled diagrams. [9 marks]
- (b) Using well labeled diagrams, discuss **TWO** types of network connection [6 marks]

QUESTION THREE

- (a) Define a computer *Network* [2 marks]
- (b) Describe **FOUR** factors to consider when setting up a network [8 marks]
- (c) State **THREE** uses of a network [3 marks]
- (d) Distinguish between *physical* and *logical* network topologies [2 marks]

QUESTION FOUR

- (a) What is a network *topology* [2 marks]
- (b) Describe **FIVE** *physical topologies* using diagrams where applicable [10 marks]
- (c) Give **three** examples of mobile *phone apps* used for wireless data communication [3 marks]

QUESTION FIVE

- (a) Distinguish between *analog* data signals and *digital* data signals [4 marks]
- (b) Using well labelled diagrams, represent *analog* and *digital* signals [6 marks]
- (c) State **THREE** factors that influence *data rates* [3 marks]
- (d) What is *signal attenuation* in data communications [2 marks]

QUESTION SIX

- (a) State **THREE** advantages of modern smart phones in data communications [3 marks]
- (b) Discuss the seven layers of the *OSI Reference Model* [7 marks]
- (c) List **TWO** characteristics of *Bluetooth* as a technology for data communication [2 marks]
- (d) State **THREE** factors to consider when selecting a network transmission media [3 marks]

