



(Knowledge for Development)

KIBABII UNIVERSITY

(KIBU)

**UNIVERSITY EXAMINATIONS
2017/2018 ACADEMIC YEAR**

**SUPPLEMENTARY/SPECIAL EXAMINATIONS
YEAR ONE SEMESTER ONE EXAMINATIONS**

**FOR THE DIPLOMA IN
(INFORMATION TECHNOLOGY)**

COURSE CODE : DIT 060

**COURSE TITLE : DATA COMMUNICATION
AND NETWORKS I**

DATE: 12/10/2018

TIME: 9:00 A.M – 11:00 A.M.

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTIONS ONE AND ANY OTHER TWO.

QUESTION ONE (COMPULSORY) [24 MARKS]

- a) What is network topology [2 marks]
- b) Differentiate between logical and physical topology giving two examples of each [6 marks]
- c) Differentiate between TCP and UDP network protocols difference between TCP and UDP [4 marks]
- d) There are two main network models, state and describe the difference between the two network models [8 marks]
- e) Discuss the functions of the NIC. [4 marks]

QUESTION TWO [18 MARKS]

- (a) Differentiate between I.P. and MAC addresses. [4 marks]
- (b) Explain the functions of the following types of servers: [8 marks]
- (i) File server
 - (ii) Mail server
 - (iii) Proxy server
- (c) Differentiate between Logical and physical addresses [2 marks]
- (d) Explain the following data transmission techniques. [4 marks]
- i. Simplex
 - ii. Full duplex

QUESTION THREE [18 MARKS]

- (a) Discuss any five factors that influence the choice of a network topology. [10 marks]
- (b) Discuss the following network devices: [8 Marks]
- (i) Gateway
 - (ii) Switch
 - (iii) Bridge

(iv) Router

QUESTION FOUR [18 MARKS]

- a) State factors to be considered when selecting a transmission medium. [4 marks]
- b) List and explain four characteristics of a LAN. [4 marks]
- c) Each media type has its advantages and disadvantages. Outline five important factors to consider when selecting media for computer networks. [5 Marks]
- d) What is a router [2 marks]
- e) State any three information contained in a routing table [3 marks]

QUESTION FIVE [18 MARKS]

- a) Differentiate between the working of Data link layer, Network layer and Transport layer. [6 marks]
- b) Define a packet in relation to data communication [1 mark]
- c) Write notes on the following:
 - i) Packet switching [4 marks]
 - ii) Circuit switching. [4 marks]
- d) Outline the advantages of packet switching over circuit switching [3 marks]