(Knowledge for Development)

KIBABII UNIVERSITY
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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 giving 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]