KIBABII UNIVERSITY COLLEGE (KIBUCO)

MAIN CAMPUS

UNIVERSITY EXAMINATIONS
2014 /2015 ACADEMIC YEAR

MAIN EXAMINATION

FOR THE CERTIFICATE IN INFORMATION TECHNOLOGY

COURSE CODE: DIT 069

COURSE TITLE: DATA COMMUNICATION AND NETWORKS II

DATE: 21/1/2015   **TIME: 2.00-4.00 P.M.**

INSTRUCTIONS TO CANDIDATES:

Answer Questions one and any other two question

QUESTION ONE Compulsory

KIBABII UNIVERSITY COLLEGE

(A Constituent College of Masinde Muliro University of Science and Technology)

UNIVERSITY EXAMINATIONS
2013/2014 ACADEMIC YEAR

COURSE CODE: DIT 069

COURSE TITLE: DATA COMMUNICATION AND NETWORKS II

DATE: 21st January　　　**TIME: 2.00-4.00 p.m.**

INSTRUCTIONS

ANSWER QURSTION **ONE** and **ANY TWO** QUESTIONS

Q1

a) Define the following as used in data communications

    i) Networking   iii) Multiplexing

    ii) Computer Networks   iv) Compression

                                                           (8 Marks)

b) Differentiate between the following

    i) LAN and WAN   iii) Circuit switching and packet switching.

    ii) UDP and TCP

                                        iv) Frame relay and ATM

    v) WIFI and WIMax   (10 Marks)

c) Two armies, amisom troops and KDF troops are each poised on opposite hills preparing to attack on an Al Shabaab target in the valley. The Al Shabaab can defeat either of the armies separately but will fail to defeat both armies if they attack simultaneously. The armies communicate via an unreliable communications system (a foot soldier). The commander with the KDF troops would like to attack at midnight. His problem is this: If he sends a message to the Amisom troops ordering the attack, he cannot be sure it will get through. He could ask for acknowledgment, but that might not get through. Is there a protocol that the armies can use to avoid defeat? Explain.

                                                          (6 Marks)

Q2.

Define any four network interlinking devices   (2 Marks)

Describe any four technologies widely used to implement WANs.   (8 Marks)

Briefly describe any four types of networks   (8 Marks)

Q3

a) Explain the importance of the network protocol architecture   (4 Marks)

b) With regards to network configurations

    i) Briefly discuss the two types of Network Configurations   (4 Marks)

    ii) Compare and Contrast between the two types of configurations   (10 Marks)

Q4.

a) Describe the key elements of a general communication model   (6 Marks)

b) What are the advantages of layering in TCP/IP architecture?   (4 Marks)

c) A broadcast network is one in which a transmission from any one attached station is received by all other attached stations over a shared medium. Examples are a bus-topology local area network, such as Ethernet, and a wireless radio network. Explain the need or the lack of a network layer in such a broadcast network.   (5 Marks)

d) Briefly discuss the origin and development of the Internet.   (3 Marks)

Q5.

a) The Ugandan and Tanzanian presidents need to come to an agreement by telephone, but neither speaks the other's language. Further, neither has on hand a translator that can translate to the language of the other. However, both presidents have English and Swahili translators in their ministerial staffs. Draw a diagram to depict the communication situation in the 7-Layer OSI architecture, and describe the interaction and each level.   (14 Marks)

b) Differentiate between the following as used in the TCP protocol suite

    i)   IPV4 and IPV6

    ii)   UDP and TCP   (4 Marks)