THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

(A Centre of Excellence)

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

DIPLOMA IN INFORMATION TECHNOLOGY (DIT 2K 11M/DIT11M)

EIT 2201: NETWORK ESSENTIALS

END OF SEMESTER EXAMINATION
SERIES: AUGUST 2012
TIME: 2 HOURS

<u>**Instructions to Candidates:**</u>
You should have the following for this examination
- *Answer Booklet*

This paper consist of **FIVE** questions in **TWO** sections **A** & **B**

Answer question **ONE (COMPULSORY)** and any other **TWO** questions
Maximum marks for each part of a question are as shown
This paper consists of **THREE** printed pages
SECTION A (COMPULSORY)

Question One (30 Marks)

a) How does the desktop operating system differ from the Network Operating System?   **(2 marks)**

b) (i) What determines a network topology?   **(2 marks)**
   (ii) Give **TWO** advantages of a mesh topology.   **(2 marks)**

c) Describe the following types of Networks.
   i)   Metropolitan Area Networks (MAN)   **(2 marks)**
   ii) Wide Area Networks (WAN)   **(2 marks)**
   iii) Wireless Local Area Networks   **(2 marks)**

d) Explain how a wireless network can be implemented from an existing cabled LAN Network.
                                                                                     (2 marks)
e) State the roles of switches and how they function in a network.   **(4 marks)**

f) Explain **FOUR** factors to consider when selecting network transmission media.   **(8 marks)**

g) Give the disadvantages of unbounded/unguided media over bounded/guided media in networking
                                                                                     (4 marks)

SECTION B (Answer Any Two Questions)

Question Two (15 marks)

Using a diagram, explain the difference between the OSI model and the TCP/IP Internet model
                                                                                     (15 marks)

Question Three (15 marks)

a) Discuss the features of the following types of networking models.   **(10 marks)**
   i) Peer to peer Networking (P2P)
   ii) Client/Server Networks

b) Outline **FIVE** advantages of using fiber optical cable over twisted pair cables. **(5 marks)**

Question Four (15 marks)

a) Suppose you are the ICT Manager of X Company. The Company Board of Directors has
   resolved that they should be having a (LAN) network connecting employees' machines, but first
   and foremost they want to install a SERVER.

   i) What advice would you give them before they buy that particular server?   **(10 marks)**
   ii) Give examples of **FIVE** Network Operating Systems (NOS).   **(5 marks)**

Question Five (15 marks)

a) List **THREE** advantages and **TWO** disadvantages of the star topology.   **(5 marks)**
b) Describe the main differences between Unshielded Twisted Pair (UTP) and Shielded Twisted Pair
   (STP).   **(5 marks)**

c) State the functions of the following Network devices:
     i) Router
     ii) Bridge
     iii) Firewall
     iv) Switch
     v) Hub   **(5 marks)**