THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of Jkuat)

Faculty of Engineering and Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

CERTIFICATE IN COMPUTER MAINTENANCE & NETWORK TECHNOLOGY
CMNT 2K 11M

ECT 1101: NETWORK ESSENTIALS

END OF SEMESTER EXAMINATIONS

SERIES: AUGUST/SEPTEMBER 2011

TIME: 2 HOURS

Instructions to Candidates:
This paper consist of **TWO** sections **A** and **B**
Answer question **ONE (COMPULSORY)** and any other **TWO** questions from the list below
This paper consists of **THREE** printed pages
SECTION A COMPULSORY (30 MARKS)

Question 1

a) How does the Client computer differ from the Server computer? (2 marks)

b) (i) What determines a network Topology (2 marks)

    (ii) Give **TWO** advantages of Mesh Topology (2 marks)

c) Explain how can one install a wireless network from an existing cabled LAN network?
(3 marks)

d) Describe the following types of Network

    (i)   Metropolitan Area Network (MAN) (2 marks)
    (ii)   Wide Area Network (WAN) (2 marks)

e) Distinguish between a REPEATER and a SWITCH? (4 marks)

f) International organization for standardization (ISO) is a federation for more than 100 standards organization throughout the world, explain why should these organizations dedicate so much time and funds in setting up standards for the network devices (4 marks)

g) Mr. Samba's LAN network consists of 3 Personnal Computers, One switch and a radio unit for the Internet from the ISP (Internet Service Providers)

    (i)   How many nodes are in this LAN network (2 marks)

    (ii)   How are the nodes uniquely identified according to the manufacturer's standardization
(2 marks)

h) List **FIVE** components of server computer (5 marks)

SECTION B (ANSWER ANY TWO QUESTIONS)

*This section consists of **FOUR** questions 20 marks each.*
Choose any two questions

Question 2 (20 marks)

Kamunyi is using a LAN network very comfortably with Ethernet Standards, (100 base TX), His son Solomon wants to connect to this network, however solomon's office is at the 20th floor of the same building from Kamunyi's approximately 150 meters away, when he was connected directly to his father's Network he could not get any signals. The cable is correctly installed and the Operating System in his machine was rightly configured.

    (i)   What could be the problem with this network connection (2 marks)

    (ii)   How can he fix this problem using the same media of transmission (6 marks)

(iii)   Give **FOUR** benefits that Solomon will enjoy after successfully connecting to Kamunyi's LAN Network?   (12 marks)

Question 3 (20 marks)

Suppose you are the IT 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   (16 marks)

(ii)   Give **FOUR** examples of Network Operating Systems (NOS)   (4 marks)

Question 4 (20 marks)

Explain in details the functions of the Data Link Layer in the Open System Interconnection (OSI) Model   (20 marks)

Question 5 (20 marks)

a) Name **FIVE** protocols at the Application Layer level of OSI model   (5 marks)

b) Give **ONE** function of each of the above protocol   (10 marks)

c) Describe **THREE** server form factors   (5 marks)