THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

Faculty of Engineering & Technology

DEPARTMENT COMPUTER SCIENCE & INFORMATION TECHNOLOGY

UNIVERSITY EXAMINATION FOR BACHELOR OF TECHNOLOGY IN INFORMATION COMMUNICATION TECHNOLOGY (BTECH. ICT 11M2)

BIT 4209: NETWORK SYSTEMS & ADMINISTRATION

SPECIAL/SUPPLEMENTARY EXAMINATION

SERIES: FEBRUARY/MARCH 2012
TIME: 2 HOURS

SECTION A (COMPULSORY)

Question 1

a) Define webserver   (2 marks)

b) State any **FOUR** consideration you would use to create IT security   (4 marks)
c) Distinguish between DNS and DHCP   (4 marks)
d) Distinguish between Client and Service Devices   (4 marks)
e) Name **FOUR** types of network servers   (2 marks)
f) Outline any **SIX** popular non computer based security measures that are applied to secure

computer systems   (3 marks)
g) (i) Define client-server
   (ii) Outline the application of client-server   (3 marks)
h) Distinguish between client-server and peer-peer network   (4 marks)
i) Define the term network server   (2 marks)
j) Outline THREE reasons for Network Anaysis   (6 marks)

SECTION B (Answer any two questions)

Question 2

a) Outline the key advantages of the tree-bus Topology over simple bus Topology (2 marks)
b) Distinguish between application firewall and network layer firewall (6 marks)
c) Describe the details proxy firewall (6 marks)
d) Describe the operation Unified Threat Management (UTM) (6 marks)

Question 3

a) (i) Describe the operation of the DNS Client Resolver Cache
   (ii) Outline any **FOUR** attributes the DNS Client Resolver Cache (8 marks)
b) (i) State **ONE** advantage of using a host file for windows in DNS
   (ii) Outline **SIX** attributes of the Host file for Windows (8 marks)
c) Describe DNS Name Space (4 marks)

Question 4

a) Outline **FOUR** features of network firewalls (4 marks)

b) Outline any **SIX** advantages of Network configuration management (6 marks)

c) Describe any **FIVE** computer based security measures that are essential in securing network systems (10 marks)

Question 5

a) (i) Describe how graph theory is applied in computer network analysis

   (ii) Outline **THREE** application of graph theory (8 marks)

b) (i) State any **TWO** network design approaches

   (ii) Outline any **FIVE** key steps that one has to accomplish in coming up with a new computer network right from scratch (7 marks)

c) Identify why the following IP addresses are invalid (5 marks)

   (i)   10.21.0.225
   (ii)   10.173.255.4
   (iii) 0.112.116.89
   (iv)   225.59.56.45
   (v)   10.54.255.1