



# THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

*Faculty of Engineering and Technology*

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

UNIVERSITY EXAMINATION FOR DEGREE IN  
BACHELOR OF TECHNOLOGY IN INFORMATION & COMMUNICATION  
TECHNOLOGY (BTech. ICT. 11M)

BIT 4209: NETWORK SYSTEMS & ADMINISTRATION

END OF SEMESTER II EXAMINATION

SERIES: DECEMBER 2011

TIME: 2 HOURS

## **Instructions to Candidates:**

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 **TWO** printed pages

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## **SECTION A (Compulsory)**

### **QUESTION 1 (30 marks)**

- |  |         |
|--|---------|
| (a) Name <b>FOUR</b> types of network servers  | 2 Marks |
| (b) Define DNS   | 2 Marks |
| (c) State any <b>FOUR</b> network topologies that one can perform network analysis                                   | 2 Marks |
| (d) Outline any <b>SIX</b> popular non computer based security measures, that are applied to secure computer systems | 3 Marks |
| (e) (i) Define client-server   | 3 Marks |
| (ii) Outline the application of client-server  | 3 Marks |
| (f) Distinguish between client-server and peer-peer network  | 4 Marks |
| (g) Define the term network server   | 2 Marks |
| (h) Outline the key advantages of the tree-bus Topology over simple Bus topology                                     | 2 Marks |
| (i) Outline <b>THREE</b> reasons for Network analysis-   | 6 Marks |
| (j) Outline any <b>FOUR</b> types of firewalls   | 4 Marks |

## **SECTION B (Attempt any TWO questions)**

### **QUESTION TWO [20 marks]**

- (a) Describe how DNS operates 6 Marks
- (b) Explain **FOUR** features of network firewalls 8 Marks
- (c) Outline any **SIX** advantages of Network configuration management 6 Marks

**QUESTION THREE [20 marks]**

- a) Describe Unified Threat management UTM
- b) State **FOUR** application of UTM
- c) Explain any **FIVE** advantages oft UTM 20 Marks

**QUESTION FOUR [20 marks]**

- (a)
  - (i) Define Network analysis
  - (ii) Outline **FOUR** variables that are useful in Network Analysis 5 Marks
- (b)
  - (i) Outline **TWO** applications of Network operating systems (NOS)
  - (ii) State any **FIVE** functions of NOS 7 Marks
- (c) Identify why the following IP addresses are invalid 6 marks
  - i. 10.1.0.0
  - ii. 10.1.0.255
  - iii. 10.123.255.4
  - iv. 0.12.16.89
  - v. 255.9.56.45
  - vi. 10.34.255.1
- (d)
  - (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

**QUESTION FIVE [20 marks]**

- (a)
  - (i) Describe graph theory is applied in computer network analysis
  - (ii) Outline **THREE** application of graph theory 8 Marks
- (b)
  - (i) Define host name resolution as applied in TCP/IP environment
  - (ii) Describe any **FIVE** attributes of host name 12 Marks