



**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**

**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 **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)**