



**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/DIT 11M)

**EIT 2201: NETWORK ESSENTIALS**

**SPECIAL/SUPPLEMENTARY EXAMINATION**

**SERIES: OCTOBER 2012**

**TIME: 2 HOURS**

**Instructions to Candidates:**

You should have the following for this examination

- *Answer Booklet*

This paper consist of **FIVE** questions  
Answer question **ONE** 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) Differentiate between physical and logical topology in networking. **(4 marks)**
- b) List some of the factors that affect signal transmission. **(3 marks)**
- c) Describe **THREE** advantages and **TWO** disadvantages of the ring topology. **(5 marks)**
- d) Outline the features of the following types of transmission media.
  - i) Poaxial Cable **(2 marks)**
  - ii) Twisted Pair Cable **(2 marks)**
  - iii) Fiber Optic Cable **(2 marks)**
- e) Differentiate between a passive and an active switch. **(3 marks)**
- f) Distinguish between a peer to peer Network and a client/server network. **(4 marks)**
- g) List **TWO** function of a protocol. **(2 marks)**
- h) State the class of the following IP addresses fall into:
  - i) 10.0.0.200 **(2 marks)**
  - ii) 172.16.0.100 **(2 marks)**
  - iii) 192.168.1.100 **(2 marks)**

**SECTION B (Answer Any Two Questions)**

**Question Two (15 marks)**

With the aid of diagrams, briefly describe each of the **FIVE** physical:

- i) Bus Topology
- ii) Star Topology
- iii) Mesh Topology
- iv) Hybrid Topology
- v) Ring Topology **(15 marks)**

**Question Three (15 marks)**

With the use of a diagram, explain the functions of each layer in the OSI model and state the corresponding network devices operating on each layer. **(15 marks)**

**Question Four (15 marks)**

- a) Differentiate between connection oriented protocols and connections protocols and give examples of each. **(9 marks)**
- b) Explain how the following commands are used in troubleshooting a network.
  - i) Tracert **(2 marks)**
  - ii) Ping **(2 marks)**
  - iii) Ip config/all **(2 marks)**

**Question Five (15 marks)**

- a) Describe the following:
- i) Wide Area Networks (WAN) **(3 marks)**
  - ii) Metropolitan Area Networks (MAN) **(3 marks)**
  - iii) Wireless Local Area Networks (WLAN) **(3 marks)**
- b) Differentiate between a cross over cable and a straight through cable. **(4 marks)**
- c) List **TWO** advantages of a computer network to an organization. **(2 marks)**