



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)**