



**THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE**

**(A Constituent College of JKUAT)**

(A Centre of Excellence)

# **Faculty of Engineering & Technology**

**DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY**

**CERTIFICATE IN TECHNOLOGY IN INFORMATION COMMUNICATION  
TECHNOLOGY  
(CICTM M12)**

**ECT 1112: DATA COMMUNICATION**

**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 **TWO** printed pages

**SECTION A (COMPULSORY)**

**Question One (20 marks)**

- a) Explain how a protocol works. **(5 marks)**
- b) Discuss any **THREE** communication channels. **(15 marks)**

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

**Question Two (20 marks)**

- a) Explain the importance of the following layers in the open system interconnection (OSI) reference model.
  - Physical and Transport Layer. **(8 marks)**
- b) Name and explain **FOUR** modulation methods. **(12 marks)**

**Question Three (20 marks)**

- a) Differentiate between microwave transmission and satellite. **(4 marks)**
- b) Differentiate between Baseband and Broadband transmission. **(8 marks)**
- c) Give the advantages of Fibre over Copper Cable. **(8 marks)**

**Question Four (20 marks)**

- a) Distinguish between logical and physical network topology. **(4 marks)**
- b) Describe multiplexing. **(4 marks)**
- c) Discuss **TWO** types of multiplexing. **(12 marks)**

**Question Five (20 marks)**

- a) Define the term Data Switching. **(2 marks)**
- b) Discuss **TWO** types of Access methods. **(10 marks)**
- c) Name and explain the **FOUR** main parts of a fibre optic cable. **(8 marks)**