



TECHNICAL UNIVERISTRY OF MOMBASA

# Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

CERTIFICATE IN INFORMATION COMMUNICATION TECHNOLOGY & MAINTENANCE  
(CICM)

**EIT 1107: DATA COMMUNICATION**

END OF SEMESTER EXAMINATION

**SERIES: APRIL 2015**

**TIME: 2 HOURS**

**Instructions to Candidates:**

You should have the following for this examination

- *Answer Booklet*

This paper consists of **FIVE** questions.

Attempt 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

### Question One (Compulsory)

- a) What is data communication (2 marks)
- b) Define each of the following terms:  
    (i) Interoperability  
    (ii) Data transmission  
    (iii) Segmentation (8 marks)
- c) List any SIX requirements of data communication (6 marks)
- d) List and explain the TWO types of data transmission (4 marks)

### Question Two

- a) Differentiate between:  
    (i) Duplex and half duplex  
    (ii) Asynchronous and synchronous transmission  
    (iii) Hub and switch  
    (iv) Router and bridges (8 marks)
- b) Briefly explain any FOUR threats to network security (4 marks)
- c) Describe situations that would favour an organization to use each of the following communication channel  
    (i) Microwave transmission  
    (ii) Leased lines (8 marks)

### Question Three

Using OSI layer model, discuss how data flows from one computer A to another computer B when downloading a file using FTP application (20 marks)

### Question Four

Write short notes on each of the following access methods:

- a) Token/passing (5 marks)
- b) CSMA/CD (5 marks)
- c) FDDI (5 marks)
- d) Fast Ethernet (5 marks)

### Question Five

- a) What are the benefits of subnetting a network (4 marks)
- b) Differentiate between each of the following terms:  
    (i) Class full addressing and classless addressing  
    (ii) Network address and IP address (8 marks)
- c) Give any FOUR benefits of Network Address Translation NAT (4 marks)
- d) Give the distinction of a public and a private IP address (4 marks)

