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 COMMUNICATION TECHNOLOGY
DIPLOMA IN INFORMATION TECHNOLOGY
(DICT 10A/DICT 11M, DICT10M/DIT 10M)

ECT 2202/EIT 2302/EIT 2302: DATA COMMUNICATION I

END OF SEMESTER EXAMINATION
SERIES: AUGUST 2012
TIME: 2 HOURS

<u>**Instructions to Candidates:**</u>
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 (20 Marks)

a) Define data communication   **(2 marks)**
b) State the **TWO** types of Transmission mode   **(2 marks)**
c) Define computer networks   **(2 marks)**
d) What is topology giving its **TWO** classifications   **(2 marks)**
e) Name the **THREE** types of guided media   **(3 marks)**
f) Explain the following terminologies.
        i) Half duplex
        ii) Simplex
        iii) Full duplex
        iv) Attenuation
        v) Cross talk   **(5 marks)**

g) Differentiate between a server computer and a client computer   **(4 marks)**

SECTION B (Answer Any Two Questions)

Question Two (20 marks)

a) Draw the OSI –Reference model, explaining briefly what happens in each layer   **(10 marks)**
b) State the differences of the single mode and multimode optical fibre cables.   **(10 marks)**

Question Three (20 marks)

a) With the help of a diagram, explain the operations of:
    i) Asynchronous Serial Transmission
    ii) Synchronous Serial Transmission   **(10 marks)**

b) With the use of unshielded twisted-pair copper wire in a network, what causes crosstalk within the cable pairs?   **(2 marks)**

c) Define the following terminologies
    i) MODEM
    ii) Interference
    iii) Band width
    iv) White Noise   **(4 marks)**

d) Explain the operation of Ring topology   **(2 marks)**

e) State the types of networks   **(2 marks)**

Question Four (20 marks)

a) Explain the following:
    i) Data switching
    ii) Circuit switching   **(6 marks)**

b) State the difference between Analogue and Digital Transmission   **(6 marks)**

c) State **FIVE** roles of a Network Administrator (5 marks)

d) What is Data encryption (5 marks)

Question Five (20 marks)

a) Define the following and their uses
    i)   HTTP
    ii) FTP
    iii) SMTP
    iv) TCP/IP (8 marks)

b) What is Routable Protocols and Non-routable Protocols (4 marks)

c) State **THREE** advantages and disadvantages of the BUS topology (4 marks)

d) Explain **TWO** importance of protocols (2 marks)