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

Instructions to Candidates:
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
<u>SECTION A (COMPULSORY)</u>

Question One (20 Marks)

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

<u>g)</u> Differentiate between a server computer and a client computer   **(4 marks)**

<u>SECTION B (Answer Any Two Questions)</u>

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)**