THE TECHNICAL UNIVERISTY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY
(DICT 12S)

EIT 2201: DATA COMMUNICATION

END OF SEMESTER EXAMINATION
SERIES: AUGUST 2013
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** and any other **TWO** questions
Maximum marks for each part of a question are as shown
This paper consists of **THREE** printed pages

Question One (Compulsory)

a) Define data communication **(2 marks)**

b) Draw and name the layers in the OSI-Referenance Model **(8 marks)**

c) Define the following terminologies:
    (i) White noise
    (ii) Attenuation
    (iii) Cross talk
    (iv) Band width **(4 marks)**

d) Name the **TWO** techniques/methods used to assign IP addresses **(2 marks)**

e) Define modulation **(2 marks)**

f) Define DTE and DCE **(2 marks)**

g) Define the following communication modes with examples:
    (i) Simplex
    (ii) Duplex
    (iii) Half duplex **(9 marks)**

h) What is a protocol **(1 mark)**

Question Two

a) With aid of diagrams, explain both the serial and parallel transmission. **(10 marks)**

b) Name any **FIVE** factors to determine how we can implement network security. **(5 marks)**

c) Define the following power problems:
    (i) Blackout
    (ii) Brownout/sag
    (iii) Spike
    (iv) Surge **(4 marks)**

d) What is a database **(1 marks)**

Question Three

a) Define network topology **(2 marks)**

b) With aid of diagrams, explain the **THREE** physical topologies **(9 marks)**

c) What is ISDN **(3 marks)**

d) Name any **SIX** roles of protocol in communication **(6 marks)**

Question Four

a) Explain the **FIVE** application areas of multiplexing. **(10 marks)**

b) Define guided/bounded transmission media. Explain the **THREE** types. **(8 marks)**

c) What is susceptibility with regards to interference **(2 marks)**

Question Five

a) Name the **THREE** fundamental modulation techniques **(3 marks)**

b) What is multiplexing **(2 marks)**
c) Define the following switching technology:
   (i) Circuit switching
   (ii) Datagram/packet switching
   (iii) Virtual circuit **(6 marks)**

d) Draw the Ethernet frame format **(5 marks)**

e) Name the **THREE** classes of IP addressing giving their ranges. **(3 marks)**

f) Define the term internet **(1 mark)**