TECHNICAL UNIVERISTY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

UNIVERSITY EXAMINATIONS FOR DEGREE IN:
BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY
(BSIT 14S – J-FT)

EIT 4107: NETWORKIGN ESSENTIALS

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) Distinguish between band rate and data rate **(4 marks)**

b) Describe any FOUR classifications of computer networks **(12 marks)**

c) Describe the following terms as used as computer networks:
   (i) Peer to peer
   (ii) Client server **(4 marks)**

d) Distinguish between half-duplex and full duplex with the aid of a sketch **(4 marks)**

e) Describe with the aid of a sketch the fibre optic communication link **(6 marks)**

Question Two

f) Discuss the reasons that led to the international community to seek for a common standard in networking **(10 marks)**

g) Describe the function of the following OSI reference model layers:
   (i) Transport
   (ii) Presentation
   (iii)   Application
   (iv) Data link
   (v) Physical

Question Three

Discuss any FOUR topologies that are popularly implemented **(20 marks)**

Modulation is one of the techniques that used in network systems administration to bring down the cost of computer networks and ensure sharing of the available bandwidth. Required:

Discuss any FIVE pulse modulation techniques that are common used **(20 marks)**

Question Four

a) Distinguish between private and public IP Address **(4 marks)**

b) Discuss the THREE IP address class of IPV 4 that are used for communication over the internet **(6 marks)**

c) (i) Define subnet
   (ii) Given 10.15.2 170/27

   Find:

   (i) 1st IP address
   (ii) Last IP address
   (iii)   Broadcast address
   (iv) Subnet address **(8 marks)**

Question Five

Discuss any TWO popular networking essentials standards (protocols) **(20 marks)**