TECHNICAL UNIVERSITY OF MOMBASA

INSTITUTE OF COMPUTING AND INFORMATICS

UNIVERSITY EXAMINATION FOR:

Bachelor of Technology in Information Communication Technology

EIT 4421: High Performance Communication Networks

END OF SEMESTER EXAMINATION

SERIES: APRIL 2016

TIME: 2 HOURS

<u>**Instructions to Candidates**</u>
You should have the following for this examination
-Answer Booklet, examination pass and student ID
This paper consists of **FIVE** questions. Attempt question ONE (Compulsory) and any other TWO questions.
Do not write on the question paper.

Question one

a) Differentiate between formative and summative evaluation approaches   (6 Marks)

b) Explain the components that constitute latency   (8 Marks).

c) Briefly describe how a Mobile Agent in a Foreign network communicates with a Home agent

   using the Mobile Multicasting Protocol (MOM)   (10 Marks)

d) Describe four   mobile communication characteristics   (4 Marks)

e) Describe two advantages of P2P networks   (2 Marks)

Question Two

2 a) Explain the advantages of cell switching over packet switching   (6 marks)

   b) Using a diagram describe user-network interface (UNI) ATM cell format   (14 marks).

Question Three

a) Describe the following techniques and their applications

    i)   XON/XOFF control

    ii)   RTS/CTS Control   (8 Marks)

b) Explain 'head-of-line blocking' and how it can be managed   (8 Marks)

c) Discuss the relative performance needs of the following applications, in terms of average bandwidth and latency:

    i)   File server

    ii)   Video monitoring of a waiting room   (4 Marks)

Question Four

4.   Briefly explain the following TCP/IP congestion avoidance methods

    a)   DECbit   (6 Marks)

    b)   Random Early Detection (RED)   (7 marks)

    c)   Source-based congestion avoidance   (7 marks)

Question Five

a) Explain the working of Multiple Access with Collision Avoidance in an 802.11 wireless LAN

                                                      (6 Marks)

b) Differentiate between active scanning and passive scanning   (4 marks)

c) With the aid of diagram explain the transmission of data between two nodes via a distributed system.

                                                     (10 Marks)