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:APRIL2016

TIME:2HOURS

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **FIVE** questions. Attemptquestion ONE (Compulsory) and any other TWO questions.

Do not write on the question paper.

Question One

a) Describe two performance evaluation approaches (6 Marks)

b) Explain four types of delay/latency (8 Marks)

c) Briefly describe three performance evaluation methodologies (9 Marks)

d) List the advantages associated with web caching (3 Marks)

e) Describe two advantages of load balancing (4 Marks)

Question Two

a) Explain the advantages of cell switching over packet switching in:

i) Queue handling

ii) Switch handling (6 marks)

b) Using an example compare the handling of fixed- length packets (cell) to variable-length packets (8 marks)

c) Explain the implementation of virtual source and destination in available bit rate (ABR) in improving communication speed (6 marks)

Question Three

a) Describe the on-demand multicast routing protocol (ODMRP) (10 Marks)

b) Given that m(u,v) is the performance metric for the link (u,v) connecting host u to host v, and a path (u, u_1, u_2,..., u_k, v) is a sequence of links in the multicast tree. Explain the three types of constraints on the path. (10 Marks)

Question Four

a) Explain the challenges encountered in network traffic management (5 marks)

b) Describe "device checking" as applied in network management and give an example using two sets of equipment classified as critical and not-so critical (15 Marks)

Question Five

a) Describe self-clocking in TCP and its limitations (5 marks)

b) With the aid of a diagram explain Fast retransmit and Fast recovery in TCP congestion control. (15 marks)