



## TECHNICAL UNIVERSITY OF MOMBASA

Institute of Computing & Informatics

### UNIVERSITY EXAMINATION FOR

### BACHELORS OF TECHNOLOGY IN INFORMATION TECHNOLOGY

BTIT/SEPT2014/S-FT

EIT 4421 HIGH PERFORMANCE COMMUNICATION NETWORKS

SPECIAL/SUPPLEMENTARY EXAMINATION

**SERIES: SEPTEMBER 2018**

**TIME: 2 HOURS**

#### **Instructions to Candidates**

You should have the following for this examination

*-Answer Booklet, examination pass and student ID*

**This paper consists of Five questions. Attempt Question One and any two other.**

**Do not write on the question paper.**

#### **Question ONE**

- (a) Explain the following terms:
- End User Device. (10 marks)
  - Attenuation. (6 marks)
  - Traffic Sink. (6 marks)
  - Class of Service. (4 marks)
  - Instruction Set. (4 marks)
- (b) Describe three major classifications of Internet traffic. (6 marks)
- (c) Explain any three features of a peer-to-peer network. (6 marks)
- (d) Outline any four characterizations of communication network traffic. (4 marks)
- (e) Using a simple diagram, describe how web proxy caching operates. (4 marks)

#### **Question TWO**

- (a) Explain the following terms and outline their importance in High performance networks:
- Hierarchy. (3 marks)
  - Diversity (3 marks)
- (b) Outline the merits and demerits of copper over optic fiber based communication channels. (6 marks)
- (c) Describe the evolution of data communication networks. (8 marks)

#### **Question THREE**

- (a) Outline any four applications of network traffic measurement tools. (4 marks)
- (b) Distinguish between Active and Passive network traffic measurement tools. (4 marks)

- (c) Network services are usually defined in two categories:
- i. Performance levels in a network.
  - ii. Functions in a network. (6 marks)
- (d) Explain the term Network Congestion and discuss three of its main causes. (6 marks)

#### **Question FOUR**

- (a) With Examples, explain the term Network Device. (4 marks)
- (b) With examples, describe any two classifications of measurable characteristics of network devices. (10 marks)
- (c) Explain the term Event as applied to a network. (2 marks)
- (d) Describe any two network monitoring tools. (4 marks)

#### **Question FIVE**

- (a) Explain the term network performance. (2 marks)
- (b) Describe four main goals of network performance. (8 marks)
- (c) Explain the term service metric. (2 marks)
- (d) Outline any two service metrics for capacity. (2 marks)
- (e) What is the main difference between a cache and a buffer? (4 marks)
- (f) Outline any two characteristics of wireless networks. (2 marks)