



TECHNICAL UNIVERISTRY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

UNIVERSITY EXAMINATION FOR DEGREE IN:
BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY
(BSIT 13S/FT – Y2 S1)

BIT 2116: NETWORK DESIGN & MANAGEMENT

END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2014

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) Describe any **THREE** key reasons that would drive a network designer to implement virtual Bridged Local Area Network **(6 marks)**
- b) (i) Distinguish between a Ethernet hub and a Ethernet switch **(4 marks)**
(ii) Explain how frames find their destination through the devices in Q1 (i) above **(2 marks)**
- c) Define the following network terminologies:
(i) Internet
(ii) Intranet
(iii) Extranet **(3 marks)**
- d) Explain some of the possible problems related to IP addressing that may lead to a computer not accessing network **(4 marks)**
- e) Outline the IPV4 private address range that are used in private networks to save on IP address **(3 marks)**

- f) Describe any FOUR major reasons why there is a lot of interest in building computer networks. **(8 marks)**

Question Two

You have been requested to assist in evaluating a network that is expected to have very good performance. Discuss the issues related to performance concerns **(20 marks)**

Question Three

- a) Discuss the main issues that you would consider when selecting a network topology. **(12 marks)**
b) Discuss the factors that you would consider in the choice of the transmission media **(8 marks)**

Question Four

- a) (i) Describe any FOUR main hardware schemes in networks **(8 marks)**
(ii) Explain the factors you consider in selecting an Ethernet hub **(2 marks)**
b) Discuss the software requirements that you would consider for a network design and management **(10 marks)**

Question Five

- a) (i) Describe the layered OSI principle **(6 marks)**
(ii) Explain the advantages of layered approach **(4 marks)**
b) Compare and contrast OSI reference model to TCP/IP protocol suite **(10 marks)**