



TECHNICAL UNIVERSITY OF MOMBASA

INSTITUTE OF COMPUTING AND INFORMATICS

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

UNIVERSITY EXAMINATION FOR:

BTITSEP 2015 & BTITSEP 2015

EIT 4201: NETWORK DESIGN & IMPLEMENTATION

BIT 2116: NETWORK DESIGN & MANAGEMENT

END OF SEMESTER EXAMINATION

SERIES:DECEMBER2016

TIME:2HOURS

DATE:Pick DateSelect MonthPick Year

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) Differentiate between the following terms
 - i) Collision and Broadcast domains (4 marks)
 - ii) Logical and physical topology (4 marks)
 - iii) MAC and IP addresses. (4 marks)
- b) Both Mercy and Christine are using Windows operating system in a network. Mercy needs to share a resource by the name VIRAGO with Christine.
 - i) How would Mercy go about sharing the resource? (2 marks)
 - ii) How would Christine go about accessing the resource for her computer? (2 marks)
 - iii) State one command or away that both Mercy and Christine might use to identify the physical address of their PC's. (2 marks)
- c) Highlight **four** advantages of using wireless media over cable based media. (4 marks)
- d) Highlight any **four** likely causes of a network connection failure. (4 marks)
- e) An internal client has an IP address of 10.0.1.150. When this address tries to communicate with an outside network; your NAT device translates it to the first available address in the range of 202.0.1.150 to 202.0.1.100. Explain. (4 marks)

Question TWO

- a) The international Organization for Standardization (ISO) Network Management forum divided network management into **five** functional areas. Describe the **five** functional areas of network management. (10 marks)
- b) Differentiate between User Datagram protocol (UDP) and Transmission Control Protocol (TCP) protocols. (4 marks)
- c) Explain **three** ways that one can use to secure SSID in wireless networking. (6 marks)

Question THREE

- a) Explain the functions of the following devices as used in networking. (10 marks)
 - i) Router
 - ii) Bridge
 - iii) Gateway
 - iv) Switch
 - v) Repeater
- b) Highlight **four** roles of a network interface card. (4 marks)
- c) State and briefly explain **three** tools for finding errors in a network. (6 marks)

Question FOUR

- a) A company is in the process of designing a computer network, knowing you as an expert in this area, they approach you to assist in designing. Describe how you will take them through a Network Design and Implementation Cycle. (14 marks)
- b) Explain **three** factors to consider when choosing a Transmission media (6 marks)

Question FIVE

- a) Using a well labeled diagram, explain the roles of each OSI reference model layer in network administration. (16 marks)
- b) What is meant by the term "redundancy" and what is a drawback of building redundancy into a network? (4 marks)