



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

(A Centre of Excellence)

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

**UNIVERSITY EXAMINATION FOR DEGREE IN BACHELOR OF SCIENCE
IN INFORMATION TECHNOLOGY (BSC IT M12)**

BIT 2116: NETWORK DESIGN & MANAGEMENT

END OF SEMESTER EXAMINATION

SERIES: AUGUST 2012

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- Answer Booklet

This paper consists of **FIVE** questions in **TWO** sections **A & B**

Answer 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

SECTION A (COMPULSORY)

Question One (30 Marks)

- a) (i) Outline the importance of standards in computer networks.
(ii) State **TWO** common standards that are used in computer networks.
(iii) Outline any **TWO** Local Area Network LAN standards. **(5 marks)**
- b) (i) Describe a Network Bridge
(ii) State **THREE** advantages of installing a network bridge. **(5marks)**
- c) (i) Define the term Simple Network Management Protocol SNMP
(ii) Explain how SNMP works. **(6 marks)**
- d) (i) Describe System Development Cycle SDLC.
(ii) Explain how SDLC relates to Network Design **(6 marks)**
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- e) Outline **FOUR** common networks tools. **(4 marks)**
- f) Describe the function of a network repeater. **(4 marks)**

SECTION B (Answer Any Two Questions)

Question Two (20 marks)

- a) A company is in the process of designing a computer network, knowing you are an expert in the area; they approach you to assist in selecting a topology that they can implement.

Required:

- i) Describe the possible topologies that you would propose to them.
- ii) Explain the factors that you would consider in selecting the best topology for the organization. **(20 marks)**

Question Three (20 marks)

- a) Describe **FIVE** common Network hardware that can assist in improving the performance of a LAN. **(15 marks)**
- b) (i) Describe the term intranet
- (ii) Differentiate between intranet and extranet. **(5 marks)**

Question Four (20 marks)

- a) Describe the reasons that make TCP/IP the “defacto” internet standard. **(5 marks)**
- b) (i) Define OSI reference model
- (ii) Explain the role of each OSI reference model layer in network management. **(15 marks)**

Question Five (20 marks)

- a) Outline the advantages of network operating system over stand alone operating systems. **(5 marks)**
- b) Describe the function of Fault, Configuration, Accountability, Performance and Security FCAPS in network management. **(15 marks)**