



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

Faculty of Engineering & Technology

DEPARTMENT COMPUTER SCIENCE & INFORMATION TECHNOLOGY

CERTIFICATE IN COMPUTER MAINTENANCE AND NETWORKING

ICT 1110: WIRELESS NETWORKING

SPECIAL/SUPPLEMENTARY EXAMINATION

SERIES: FEBRUARY/MARCH 2012

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*

This paper consist 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 **THREE** printed pages

SECTION A (COMPULSORY)

Question One

- a) Explain the difference between “Ring topology” and “Bus topology” [4 Marks]
- b) State any **four** benefits of computer networks. [4 Marks]
- c) Explain the **two** categories of networks media. [4 Marks]
- d) Explain the **four** main categories wireless networks of depending area of coverage. [4 Marks]
- e) State any **four** types of attacks to computer networks. [4 Marks]

SECTION B (Answer any Two questions)

Question Two

- a) Explain the term “Very Small Aperture Terminal (VSAT)” [2 Marks]
- b) With an aid of a diagram, explain the configuration of VSAT system. [8 Marks]
- c) Explain the following terms and used in information security
- i. Integrity
 - ii. Privacy
- d) Explain any **three** advantages of VSAT. [6 Marks]
- e) Explain any **two** limitations of satellite communication. [2 Marks]
- f) Explain the term “Wireless Networking” [2 Marks]

Question Three

- a) To secure wireless networks, administrators can require all wireless communications to be authenticated and encrypted.
- i. State the **three** wireless security technology that can be used to protect wireless networks. [3 Marks]
 - ii. Explain how each technology in Q3a (i) above works. [6 Marks]
- b) Explain any **four** advantages offered by wireless local area networks over wired networks. [4 Marks]
- c) Explain the difference between the terms “Uplink” and “Downlink” as used in satellite communication. [4 Marks]
- d) State any **three** factors to consider when choosing a network media [3 Marks]

Question Four

- a) Explain the following wireless configurations as used in an enterprise
- i. Peer – to – peer
 - ii. Point – to – point
 - iii. Master/Slave [6 Marks]

- b) State any **two** characteristics of the following wireless communication technologies:
- i. Bluetooth
 - ii. Ultra wide band
 - iii. Wireless sensor network
- [6 Marks]
- c) Distinguish between “Adhoc” and “Infrastructure” modes as used in wireless networks
- d) Explain the following terms:
- i. Transceiver
 - ii. WiMAX
 - iii. Bandwidth
 - iv. Hot spot
- [8 Marks]

Question Five

- a) Explain the following types of transmission methods used in data communication.
- i. Simplex
 - ii. Duplex
 - iii. Half-duplex
- [6 Marks]
- b) Explain the difference between “Physical topology” and “Logical topology”
- [4 Marks]
- c) Explain the application of wireless LANs in the following areas:
- i. Medicine
 - ii. Academia
 - iii. Network managers
 - iv. Senior executives
- [8 Marks]