THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

Faculty of Engineering & Technology

DEPARTMENT COMPUTER SCIENCE & INFORMATION TECHNOLOGY

CERTIFICATE IN COMPUTER MAIINTENANCE AND NETWORKING

ECT 1110 WIRELESS NETWORKING

END OF SEMESTER EXAMINATIONS

SERIES: DECEMBER 2011

TIME: 2 HOURS

<u>**Instructions to Candidates:**</u>
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   20marks

a) Explain the difference between the terms "Uplink" and "Downlink" as used in satellite
    communication.   [4 Marks]

b) State any **four** benefits of computer networks.   [4Marks]

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 f**our** types of attacks to computer networks.   [4 Marks]

SECTION B (ANSWER ANY TWO QUESTIONS)

Question Two   20marks

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   20marks

a) To secure wireless networks, administrators require all wireless communications to be
   authenticated and encrypted.

   i.   State the three wireless security technologies 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 "Ring topology" and "Bus topology"   [4 Marks]

d) State any **three** factors to consider when choosing a network media   [3 Marks]

Question Four   20marks

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.   Ultrawide band
    iii.   Wireless sensor network   [6 Marks]

c) Distinguish between "Adhoc" and "Infrastructure" network modes as used in wireless networks

d) Explain the following terms:

    i.   Transceiver
    ii.   WiMAX
    iii.   Bandwidth
    iv.   Hotspot   [8 Marks]

Question Five   20marks

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
    v.   Finance Officer   [8 Marks]