THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

Faculty of Engineering & Technology

DEPARTMENT COMPUTER SCIENCE & INFORMATION TECHNOLOGY

HIGHER DIPLOMA IN COMPUTER STUDIES

ECT 3214: MOBILE TECHNOLOGIES

END OF SEMESTER EXAMINATIONS

SERIES: DECEMBER 2011

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

QUESTION 1 (20 MARKS)

a) Define the following terms

     i. computing
    ii. Mobility   [4marks]

b) Briefly explain the following mobile computing terms

     i. Foreign agent
    ii. Mobile node
   iii. IP host   [3marks]

c) Distinguish between the following technologies

     i. 2.5 G
    ii. 2.75 G   [4marks]

d) Explain the following wireless technology terms

     i. Infrastructure mode
    ii. Ad hoc mode
   iii. Basic service set   [3marks]

e) State **three** factors that determine the size of the cell size in a cellular network   [3marks]

f) State any **three** challenges facing the mobile devices   [3marks]

SECTION B (ANSWER ANY TWO QUESTIONS)

QUESTION TWO (20 Marks)

a) With the aid of a diagram describe the elements of a cellular network.   [10marks]

b) Briefly explain techniques used for location management   [10marks]

QUESTION THREE (20 Marks)

a) Explain the following mobile routing terms
        i. Triangular routing
      ii. Indirect routing
     iii. Direct routing
     iv. correspondent
      v. Home agent

                                                 [10marks]

b) Briefly describe how routing of messages is achieved in celluar networks

                                                 [10marks]

QUESTION FOUR (20 Marks)

a) Briefly explain the basic operation of mobile IP protocol

[10marks]

b) Briefly explain the following flags as used in the mobile IP extension
    i. R
   ii. B
  iii. F
  iv. M
   v. H   [10marks]

QUESTION FIVE (20 Marks)

Briefly describe the following message routing techniques

    i.   Agent advertisement
   ii.   Agent solicitation
  iii.   Registration request
  iv.   Registration reply
   v.   Tunneling   [20marks]