TECHNICAL UNIVERISTY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY
(DICT 13J)

EIT 2203: WIRELESS TECHNOLOGY

END OF SEMESTER EXAMINATION
SERIES: DECEMBER 2013
TIME: 2 HOURS

<u>**Instructions to Candidates:**</u>
You should have the following for this examination
- *Answer Booklet*

This paper consists of **FIVE** questions. Attempt question **ONE** and any other **TWO** questions
Maximum marks for each part of a question are as shown
This paper consists of **THREE** printed pages

Question One (Compulsory)

a) What topology is most often seen in a LAN and is designed to connect multiple devices to the network? **(2 marks)**

b) What is the common name of the WMAN technology **(2 marks)**

c) What device does an access point act as to connect wireless client to a wired network. (2 marks)

d) For topologies where cable lengths prohibit placing an AP in certain locations, what solution can be used? **(4 marks)**

e) What are the main families of antennas **(4 marks)**

f) To lower the amount of energy being sent to the antenna, what device can be used. **(2 marks)**

g) The FCC and ETSI have imposed what requirements for use in the UNII-2 band? **(4 marks)**

Question Two

a) Name TWO potential sources of interference for wireless Local Area Networks. **(4 marks)**

b) What is ZigBee? How is it used in the world today? **(5 marks)**

c) Mention FIVE uses of ZigBee. **(5 marks)**

d) What THREE functions does a Wireless LAN controller handle in a unified wireless communication system? **(6 marks)**

Question Three

Study the diagram below and answer carefully:

WAREHOUSE

Explain giving reasons what solutions will you deploy provide connectivity to all the mobile users as well the new branch office in Kilifi Town, so that the LAN is extended to the branch office and the warehouse. **(20 marks)**

Question Four

a) What are the TWO main threats to wireless networks? **(4 marks)**

b) In centralized authentication, a certificate a certificate can be used based on information from a trusted third party. What information does the certificate contain? **(6 marks)**

c) Which IEEE specification is used in central authentication? **(2 marks)**

d) What are the most common security options available in an Access Point **(6 marks)**
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e) How is WI-FI protected Access different from its 2nd generation? **(2 marks)**

Question Five

a) The following are FIVE common Air Protocols. Describe each briefly. **(10 marks)**
   (i) CDMA 2000
   (ii) W-CDMA
   (iii) IS-95
   (iv) AMPS
   (v) GSM

b) Describe the FOUR sections of the GSM networks structure. **(8 marks)**

c) In the GSM network what component would be required to be available before EDGE could be implemented? **(2 marks)**