KIBABII UNIVERSITY
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UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR

SPECIAL/SUPPLIMENTARY
YEAR THREE SEMESTER ONE EXAMINATIONS

FOR THE BACHELOR OF
(INFORMATION TECHOLOGY)

COURSE CODE   :   BIT 311
COURSE TITLE   :   WIRELESS AND mobile computing

DATE: 17/11/2022   TIME: 2.00 P.M. – 4.00 P.M.

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTIONS ONE AND ANY OTHER TWO.

QUESTION ONE (COMPULSORY) [30 MARKS]

a) Describe the two radio interface that are applied to GSM stating their functions   [4Marks]

b) What is the difference between UMTS and WiMax? State the area coverage, and the throughput   [4Marks]

c) Differentiate between Passive and Active Tag as applied to RFID   [4Marks]

d) What are the three inter-frame-spacing defined in the CSMA/CA? Explain   [6Marks]

e) If two clients access the same access point with different speeds (eg, one to 11 Mbit / s and the other at 1 Mbit / s, how fast must the access point issue its supervisory frame? Show calculation   [6Marks]

f) A GSM subscriber has a communication 20 minutes. What is the number of slots that is sent by the base station during communication?   [3Marks]

g) What is the maximum bit rate between a mobile phone (MS) and a base station (BTS)? Explain your answer   [3Marks]

QUESTION TWO [20 MARKS]

a) Explain the meaning of the following terms and state the GSM values
   i) Duplex Distance   [2Marks]
   ii) Channel Spacing   [2Marks]
   iii) Uplink and Downlink Frequency Band   [2Marks]
   iv) Transmission Rate   [2Marks]

QUESTION THREE [20 MARKS]

a) Differentiate between Mobile Computing and Wireless network   [4Marks]

b) Discuss any four place of Mobile computing Application   [8Marks]

c) International Mobile Station Equipment Identity (IMEI) is made up of four parts. Discuss this parts starting the total number of items they hold   [8Marks]

QUESTION FOUR [20 MARKS]

a) It is said that GSM is the most secured network available today. Discuss the three things that GSM does to make it secure   [6Marks]

b) Explain why network sensor has a limited lifespan   [2Marks]

c) What are the features of Mobile IP?   [4Marks]

d) Explain the PSTN to Mobile Phone operation in the correct sequence using a diagram   [8Marks]

QUESTION FIVE [20 MARKS]

a) Discuss any four wireless protocol   [8Marks]

b) Explain why each client won't receive more than 1Mbit/s if we have more than 11 clients sharing resources of a cell   [6Marks]

c) Differentiate between   [6Marks]
   i) Mobile computing and Wireless Technology
   ii) 1G and 2G
   iii) GSM and GPRS