MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS
2019/2020 ACADEMIC YEAR

SCHOOL OF SCIENCE & INFORMATION SCIENCE
EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN COMPUTER SCIENCES

COURSE CODE: COM 3108
COURSE TITLE: MOBILE COMPUTING

DATE : 10TH DECEMBER 2019 **TIME : 11.00AM-1.00 P.M.**

INSTRUCTIONS TO CANDIDATES:
SECTION A IS COMPULSORY ATTEMPT TWO QUESTIONS IN SECTION B
QUESTION PAPER

QUESTION ONE **(30 MARKS)**

a. Define mobile computing (2 marks)
b. State the information found in a SIM card of a mobile phone (4 marks)
c. Briefly explain four limitations of Mobile Computing (4 marks)
d. Differentiate hard and soft handoff? (2 marks)
e. Explain the meaning of frequency reuse in mobile communication (2 marks)
f. Explain four technical issues that should be addressed in planning of a cellular network (4 marks)
g. Explain three disadvantages of cellular systems with small cells (3 marks)
h. Describe cell sectoring (2 marks)
i. Discuss the various channel allocation techniques used in cellular communication (3 marks)
j. Explain different types of cells used in mobile phone communication (4 marks)

QUESTION TWO (20 MARKS)

Discuss the GSM network architecture (20 marks)

QUESTION THREE (20 marks)

a. Discuss the following types of multiplexing (8 marks)
    i. Space Division Multiplexing Access
    ii. Code division multiplexing Access
    iii. Time division multiplexing Access
    iv. Frequency division multiplexing Access
b. Discuss the differences between 3rd generation mobile phones and 4th generation mobile phones in terms of speeds, frequency band, bandwidth, switching design basis, access technologies (10 marks)
c. Describe mobility management (2 marks)

QUESTION FOUR (20 MARKS)

a. Give the steps followed to a establish a call between a landline and a mobile station (14 marks)
b. Discuss the different versions of carrier sense multiple access (CSMA) used in wireless LANs. (6 marks)

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