(Knowledge for Development)

KIBABII UNIVERSITY

(KIBU)

UNIVERSITY EXAMINATIONS
2019/2020 ACADEMIC YEAR

END OF SEMESTER EXAMINATIONS
YEAR THREE SEMESTER ONE EXAMINATIONS

FOR THE DEGREE IN
(INFORMATION TECHNOLOGY)

COURSE CODE : BIT311

COURSE TITLE : WIRELESS AND MOBILE COMPUTING

DATE : 9/12/2019 TIME: 8.00 AM-10.00AM

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTIONS ONE AND ANY OTHER TWO.

QUESTION ONE [30 MARKS] – (COMPULSORY)

a) Define the following terms [4 marks]
   i) Mobile computing
   ii) Wireless communication
   iii) Pervasive computing
   iv) Cellular network

b) Explain any three challenges of mobile computing [6 marks]

c) What is the principle of frequency reuse in context of cellular networks? List the ways of increasing the capacity of a cellular system? [4 marks]

d) Describe are HLR and VLR? [4 marks]

e) State any three wireless standards [3 Marks]

f) Explain the function of Dynamic Host Control Protocol [4 marks]

g) Explain the reason why in cellular networks the cell is a hexagonal shape [5 Marks]

QUESTION TWO [20 MARKS]

a) Define handoff and explain four types of handoff [9 marks]

b) State five reason why handoff occurs in cellular networks [5 Marks]

c) Identify six functions of base station controller [6 Marks]

QUESTION THREE [20 MARKS]

a) Differentiate between cellular IP and Mobile IP [5 marks]

b) Define GSM and state any three features of GSM [5 marks]

c) State and explain the different cell sizes in GSM network [10 Marks]

QUESTION FOUR [20 MARKS]

a) State four components of GSM architecture [4 marks]

b) Define synchronous transmission [2 marks]

c) State and four applications of mobile computing [4 marks]

d) Define duplixing and state and expalin three approaches used [10 marks]

QUESTION FIVE [20 MARKS]

a) Discuss any three levels of location management [9 marks]

b) Decribe the communication process steps in a cellullar networks [11 Marks]