



[*Knowledge for Development*]

**KIBABII UNIVERSITY**

[KIBU]

**UNIVERSITY EXAMINATIONS  
2019/2020 ACADEMIC YEAR**

**SPECIAL/SUPPLEMENTARY EXAMINATIONS  
YEAR FOUR SEMESTER ONE EXAMINATIONS**

**FOR THE DEGREE IN  
COMPUTER SCIENCE**

**COURSE CODE : CSC 314**

**COURSE TITLE : MOBILE COMPUTING**

**DATE: 11/02/2021**

**TIME: 8:00 A.M – 10:00 A.M.**

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**INSTRUCTIONS TO CANDIDATES**

**ANSWER QUESTIONS ONE AND ANY OTHER TWO.**

### QUESTION ONE [COMPULSORY] [30 MARKS]

- a) Define: [1Mark]  
i. Mobile IP [1Mark]  
ii. Mobile computing [6 Marks]
- b) State and explain any three wireless security standards applied in WLANS [6 Marks]
- c) Differentiate between 3G and 4G technologies of data transmission as used in mobile computing [2 Marks] [6 Marks]
- d) Explain the three services provided by GSM [6 Marks]
- e) Describe any two techniques that may be used to determine the current network address of a mobile unit. [4 Marks] [8 Marks]
- f) State and explain four problems of mobile computing. [8 Marks]

### QUESTION TWO [20 MARKS]

- a) State and explain any five limitations of mobile computing [10 Marks]
- b) Differentiate between Broadcast control channel (BCCH) and common control channel (CCCH) as used in GSM networks. [4 Marks]
- c) Explain the possible reasons as to why if you place a phone call it might end up being terminated by the service provider. [6 Marks]

### QUESTION THREE [20 MARKS]

- a) Differentiate between algorithm A3, A5 and A8 as used to provide security services in a GSM network. [10 Marks]
- b) A satellite's job in the communications network is to serve as a repeater. Explain [2 Marks] [6 Marks]
- c) Differentiate between:  
i. 802.11g and 802.11i standards  
ii. 802.1x and WPA [2 Marks]
- d) Define Wireless computing [2 Marks]

### QUESTION FOUR [20 MARKS]

- a) Discuss any four handover scenarios that could take place in a GSM network [8Marks]
- b) Differentiate between FDMA and TDMA as used in multiplexing traffic in GSM [4Marks] [4Marks]
- c) State any four application areas of WLANS [4Marks]
- d) Discuss the data recovery process in database management. [4Marks]

**QUESTION FIVE [20 MARKS]**

a) Explain the GSM architecture.

**[20 Marks]**