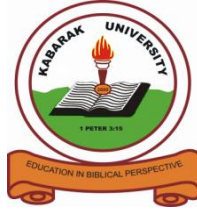


**KABARAK**



**UNIVERSITY**

**UNIVERSITY EXAMINATIONS**

**SECOND SEMESTER, 2018 /2019 ACADEMIC YEAR**

**EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN COMPUTER  
SCIENCE**

**COMP 340/INTE 413: MOBILE COMPUTING**

**STREAM: [Y3S2]**

**TIME: 11.00-1.00P M**

**EXAMINATION SESSION: JAN-APRIL**

**DATE: 8/04/2019**

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**INSTRUCTIONS**

- (i) **Question One is COMPULSORY.**
- (ii) **Attempt any other TWO Questions from the remaining section.**
- (iii) **Do not write on the question paper**
- (iv) **Show your working clearly**

**SECTION A (30 MARKS)**

**QUESTION ONE (30 MARKS)**

- a) Write a note on the following concepts:
  - i. Mobile Computing (2 Marks)
  - ii. Network Topology (2 Marks)
  - iii. Mobility (1 Mark)
  - iv. RFID (2 Marks)
- b) What are the characteristics of a mobile computing environment? Explain. (4 Marks)
- c) What are the advantages of standards? Name any **THREE** the Standard Committee responsible for 3G. (3 Marks)
- d) State the TWO types of user dialogue controls used in communication. (2 Marks)
- e) Discuss briefly on the *Ad-hoc* and the *infrastructure mode* of wireless LAN networks. (4 Marks)

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*As members of Kabarak University family, we purpose at all times and in all places, to set apart in one's heart, Jesus as Lord.*

*(1 Peter 3:15)*



Kabarak University is ISO 9001:2015 Certified

- f) RFID tags can be of different categorizations. Explain any three of these categorizations in detail. (6 Marks)
- g) Differentiate between wired and wireless networks and give examples in each. (4 Marks)
- h) Give the applications of wireless LAN. (3 Marks)

### QUESTION TWO (20 MARKS)

- a) Describe what Multiple Access is and why it is important in mobile computing. (4 Marks)
- b) An environment can be categorized as being mobile if it supports a number of functions. Explain any six of these functions. (6 Marks)
- c) Discuss any four restrictions that come with mobile devices. (4 Marks)
- d) Explain the following types of information contained in the GPS Signal.
  - i) Pseudorandom (2 Marks)
  - ii) Almanac (2 Marks)
  - iii) Ephemeris (2 Mark)

### QUESTION THREE (20 MARKS)

- a) The concept of Mobility management is an important aspect of mobile computing, discuss why? (4 Marks)
- b) With the aid of a well labeled diagram discuss the architecture and functionality of the Existing Cellular Network. (6 Marks)
- c) Write a note on any four advantages of WLANs. (6 Marks)
- d) Explain how security is implemented security in Wireless LAN networks (4 Marks)

### QUESTION FOUR (20 MARKS)

- a) Explain the security and mobility issues affecting mobile computing. (6 Marks)
- b) State and explain the reason why a corporate organization may settle on Mobile Ad-Hoc networks for their mobile computing systems. (6 Marks)
- c) Define the following terms:
  - i. Soft Handover. (2 Marks)
  - ii. Seamless Communication (2 Marks)
  - iii. Roaming. (2 Marks)
  - iv. Context (2 Marks)

### QUESTION FIVE (20 MARKS)

- a) Explain in detail the GSM Architecture with the aid of a well labeled diagram.(6 Marks)
- b) Differentiate between the concepts of RADIO Transmission and INFRARED outlining the advantages and demerits of each. (4 Marks)
- c) Write a note on the following concepts.
  - I. Wireless fidelity (2 marks)
  - II. Wi – Max (2 Marks)
- d) With the aid of a well labeled diagram explain the M-TCP. (4 Marks)
- e) Asses any four advantages of M-TCP. (2 Marks)

