

Uganda Martyrs University

UNIVERSITY EXAMINATIONS

FACULTY OF SCIENCE

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION SYSTEMS

END OF SEMESTER FINAL ASSESSMENT

SEMESTER 2, 2022/2023

COURSE	:	BACHELOR OF SCIENCE IN COMPUTER SCIENCE & BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY
CLASS/YEAR	:	TWO
EXAM	:	MOBILE COMPUTING AND NETWORKS
CODE	:	CSC 2205
SEMESTER	:	TWO
DATE	:	WEDNESDAY MAY 24th, 2023
TIME	:	9:30 – 12:30 PM
DURATION	:	3 HOURS

Instructions

1. *Attempt All Questions in Section A and three Questions in Section B*
 2. *Use of relevant Illustrations/diagrams will earn you a bonus mark (s)*
 3. *Remember to indicate the question number you have answered.*
 4. *Write your name, course and registration number on all your answer sheets*
 5. *All answers should be written on the answer booklet*
 6. *All university rules apply*
-

SECTION A: COMPULSORY (20 MARKS)

QUESTION ONE

You have been hired by a commercial bank to develop a financial mobile application (app). The app will enable customers of the bank to carry out a number of transactions including checking their account balance, transferring funds between accounts, transfer money to their mobile money wallet, and pay for goods and services. Customers will also be able to pay for utilities such as water, electricity, etc.

- A) Specify two functional requirements for the proposed financial mobile app. **[4 MARKS]**
- B) Which mobile application type would you select to implement the proposed app? Justify your answer. **[3 MARKS]**
- C) Identify three elements of mobile information architecture that will guide your design of the proposed app. Explain what design goals will be achieved using each element. **[3 MARKS]**
- D) Suggest a detailed information architecture for the proposed mobile app. **[10 MARKS]**

SECTION B: (30 MARKS)

QUESTION TWO

Explain the following principles of mobile computing **[10 MARKS]**

- a) Portability
- b) Interactivity
- c) Connectivity
- d) Individuality
- e) Security

QUESTION THREE

Explain the following components of a mobile computing system **[10 MARKS]**

- a) User device
- b) Network
- c) Gateway
- d) Middle-ware
- e) Content

QUESTION FOUR

With the aid of a diagram, describe a 3-tier architecture for a mobile application system.

[10 MARKS]

QUESTION FIVE

Explain the importance of Context (uppercase C) and context (lowercase c) as used in mobile application design.

[4 MARKS]

Explain any three value propositions for a mobile application of your choice.

[6 MARKS]

QUESTION SIX

Explain any five kinds of work performed by an information architect.

[5 MARKS]

Explain any five principles of information architecture.

[5 MARKS]

QUESTION SEVEN

Explain the following software design patterns

[10 MARKS]

a) Model-View-Controller

b) Delegate design pattern

QUESTION EIGHT

Describe any five characteristics of a mobile device that present opportunities and/or constraints that influence technical and non-technical decisions on mobile app development.

[10 MARKS]

QUESTION NINE

Explain the characteristics of the following types of mobile applications.

[10 MARKS]

a) Native mobile applications

b) Mobile web

c) Hybrid mobile applications

QUESTION TEN

Explain the following quality attributes of mobile applications

[10 MARKS]

a) Usability

b) Performance

c) Maintainability and support

THE END!