



# **MURANG'A UNIVERSITY OF TECHNOLOGY**

## **SCHOOL OF COMPUTING AND INFORMATION TECHNOLOGY**

DEPARTMENT OF INFORMATION TECHNOLOGY

TVET EXAMINATION

2023/2024 ACADEMIC YEAR

SEMESTER ONE EXAMINATION FOR DIPLOMA IN  
INFORMATION TECHNOLOGY

IT/OS/ICT/CR/11/6: MOBILE APPLICATION DEVELOPMENT

DURATION: 2 HOURS

### **INSTRUCTIONS TO CANDIDATES:**

1. Answer ALL the questions in Section A and any other TWO questions in Section B.
2. Mobile phones are not allowed in the examination room.
3. You are not allowed to write on this examination question paper.

**SECTION A: ANSWER ALL QUESTIONS IN THIS SECTION (30 MARKS)**

**QUESTION ONE**

- a) Define the following terms. (8 marks)
- i. Mobile application
  - ii. Mobile application development
  - iii. Mobile computing
  - iv. User interface
- b) Explain the three types of mobile application. (6 marks)
- c) Describe any three challenges associated with mobile computing. (6 marks)
- d) State any four characteristics of smart client. (4 marks)
- e) caching is used to improve the performance and responsibilities of mobile application and to support operation when there is no network connection. Explain any two factors consider when designing caching. (4 marks)

**SECTION B: ANSWER ANY TWO QUESTIONS IN THIS SECTION (40 MARKS)**

**QUESTION TWO**

- a) Describe the term mobile database. (2 marks)
- b) Differentiate between a local mobile database and remote Mobile database. (2 marks)
- c) A mobile application may need to interact with a sever. Describe the sever connection forms listed below in your answer be sure to include at least one advantage and one disadvantage of each of the method. (16 marks)
- i. Direct connection
  - ii. Sever side application
  - iii. Web application
  - iv. Cloud integration

**QUESTION THREE**

- a) Explain the use of the database in mobile application. (4 marks)
- b) State criterions that a mobile application can use when dialog whether or not to use datasets in their application. (4 marks)
- c) Discuss any four mobile application design consideration. (12 marks)

#### **QUESTION FOUR**

- a) Differentiate between data replication and data synchronization. (8 marks)
- b) Describe each of the following data synchronization methods. (12 marks)
  - i. Using merge replication
  - ii. Using web serves
  - iii. RDA (remote data access)

#### **QUESTION FIVE**

- a) User experience in mobile application. (1 mark)
- b) There are three user interface style of mobile application develop. can choose from when developing application. Explain them. (9 marks)
- c) Explain the difference between merge replication synchronization technique and remote data access under the following. (10 marks)
  - i. Effort
  - ii. Configuration
  - iii. Tracking charges
  - iv. Transaction
  - v. Multiple table synchronization