MURANG'A UNIVERSITY OF TECHNOLOGY

SCHOOL OF COMPUTING AND INFORMATION TECHNOLOGY

DEPARTMENT OF INFORMATION TECHNOLOGY

TVET EXAMINATION

2023/2024 ACADEMIC YEAR

FIRST YEAR **SECOND** SEMESTER EXAMINATION FOR DIPLOMA IN INFORMATION TECHNOLOGY

IT-OS-ICT-CR-11-6: MOBILE APPLICATIONS DEVELOPMENT

DURATION: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

1. Answer question one and any other two questions.
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

QUESTION ONE (30 MARKS)

a. Android application include components that may be classified in to 4 categories. Name and briefly describe these categories. (4 marks)
b. Write the following files for a simple tax calculator given the income
    i. Main activity java. (2 marks)
    ii. Main activity Xml. (2 marks)
    iii. Manifest Xml (2 marks)
    iv. Income tax java. (2 marks)
c. Android operating systems for mobile devices has been increasing its market share worldwide. Describe one reason that explains this trend. (4 marks)
d. Define and explain the relationship between default parameter and overloading. (4 marks)
e. State and briefly describe the four parts of a GSM network. (4 marks)
f. Discuss three limitations that are associated with mobile devices. (6 marks)

SECTION B – ANSWER ANY TWO QUESTIONS IN THIS SECTION

QUESTION TWO (20 MARKS)

a. State and briefly describe 5 methods used to describe the fragment life cycle in android application development. (6 marks)
b. What is an exception handler? use an example to explain your answer. (4 marks)
c. Briefly explain the purpose of "set content raw (R layout main" lines code public void on creates (bundle saved instance state)

    {-----
    Set content view (R. Layout main)
    ---}
    In the following. (4 marks)
d. Explain 5 states that an activity goes through during a life cycle. Draw a well labelled diagram that illustrates the lifecycle. (6 marks)

QUESTION THREE (20 MARKS)

a. With the help of a diagram describe the four layers or the android software architecture. (6 marks)
b. What is information hiding and how is it implemented? (4 marks)
c. Describe the following layout in the context user interface of a mobile application draw a diagram for each case to demonstration you understand. (4 marks)
    i. Relative layout

ii. Frame layout

d. Briefly describe four functions of a manifest XML life in mobile programming. (6 marks)

QUESTION FOUR (20 MARKS)

a. State and explain any two-selection control that are used to implement user interface of a mobile application write a sample code to demonstrate their implementations. (5 marks)

b. Using the SMS API write the code for non-activity java for composing a new SMS. (5 marks)

c. Using an android code example, how to launch an activity in android. (5 marks)

d. Write android code to demonstrate how you pass the data to sub activities. (5 marks)

QUESTION FIVE (20 MARKS)

a. Describe the 6 steps of the mobile application development process. (6 marks)

b. Explain the meaning of the following lines of code in the context of mobile programming. (6 marks)

```
Public class lab2 extends activity
{
Public void on creates (bundle saved instance state
{
Super on create (saved instance state):
Text view =new text view (this)
View set text (freshers' night is on Friday 11th march2022/n
)
Set content view
}
}
```

c. Write android layout file (activity main x ml) that would display your name on the screen. (8 marks)