MURANG'A UNIVERSITY OF TECHNOLOGY

SCHOOL OF COMPUTING AND INFORMATION TECHNOLOGY

DEPARTMENT OF INFORMATION TECHNOLOGY

UNIVERSITY ORDINARY EXAMINATION

2017/2018 ACADEMIC YEAR

THIRD YEAR **FIRST** SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY, BACHELOR OF SCIENCE IN COMPUTER SCIENCE AND MATHEMATICS AND BACHELOR OF SCIENCE IN SOFTWARE ENGINEERING

SIT 302 – MOBILE APPLICATION DEVELOPMENT

DURATION: 2 HOURS

DATE: 7TH DECEMBER, 2017

TIME: 9.00 – 11.00 A.M.

Instructions to Candidates:

1. Answer **Question 1** 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 ONE - COMPULSORY

QUESTION ONE

(a) Define the term Android (2 Marks)

(b) Describe any FOUR features that make Android to be attractive to mobile phone users (8 Marks)

(c) Explain the following FOUR main components that are used within an Android application:

i) Activities

ii) Services

iii) Broadcast receiver

iv) Content providers (8 Marks)

(d) Explain the function of the manifest.xml file in Android (2 Marks)

(e) Write an Android application that inputs two numbers and then computes and displays the sum (10 Marks)

SECTION TWO – ANSWER ANY TWO QUESTIONS

QUESTION TWO

(a) A mobile application activity goes through a number of state transitions. Using an illustration, name the state transitions of an activity (15 Marks)

(b) Name the methods in a fragment life cycle in Android (4 Marks)

(c) In android, explain what you understand by APK (1 Mark)

QUESTION THREE

(a) Draw an illustration of the Android architecture. Explain the main parts of the architecture (10 Marks)

(b) Name the method that is used to stop the services in an Android application (2 Marks)

(c) Assume you have an application that is already running an activity called Activity 1. Activity 1 starts another activity called Activity 2. Name one activity lifecycle method that will be called on Activity 1 after this point, but before Activity 2 starts (4 Marks)

(d) Suppose you have an application that is running on Activity called Activity 1. Suppose that Activity 1 executes and starts other activities, but that the user never quits or backs out of the activity. How many times can Activity 1's onCreate ( ) methods get called? Explain your answer (2 Marks)

(e) You have been doing your mobile application performance testing on a simulator. Why would you need to do some testing on real device (2 Marks)

QUESTION FOUR

(a) List the FOUR features of an AlertDialog (4 Marks)

(b) An application resides on mobile devices and was written specifically for that device. What type of application is it, select one from the options: web based, hybrid or native. Explain your answer. (2 Marks)

(c) Write an android application program that inputs integer number, then it generates and computes the sum of 1 (one) to that number. The computed number is displayed. (14 Marks)