

*(Knowledge for Development)*

**KIBABII UNIVERSITY**

**UNIVERSITY EXAMINATIONS  
2019/2020 ACADEMIC YEAR**

**END OF SEMESTER EXAMINATIONS  
YEAR FOUR SEMESTER TWO**

**FOR THE DEGREE OF  
COMPUTER SCIENCE**

**COURSE CODE : CSC 465E**

**COURSE TITLE : MOBILE APPLICATION  
PROGRAMMING**

**DATE: 11/11/2020      TIME: 9:00 A.M – 11:00 A.M**

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**INSTRUCTIONS:**

**ANSWER QUESTIONS ONE AND ANY OTHER TWO**

### QUESTION ONE [COMPULSORY] [30 MARKS]

- a) Define the following terms as used in mobile application programming.
  - i. Android [1 mark]
  - ii. Data Persistence [1 mark]
- b) The onset of mobile technology is getting popular day by day and it is placing itself in the center of the present and future. Discuss the trends driven by mobile applications today and future opportunities. [6 marks]
- c) Mobile application development is a process which is more complicated than the traditional software development process. Discuss differences that exist between traditional software development and mobile application development. [6 marks]
- d) Android programming is composed of Java and xml. Discuss why the two languages were combined to form android programming. [4 marks]
- e) Android operating system is said to be Linux-based, explain the four layers of android operating system. [4 marks]
- f) You have just finished developing an android application that provides guiding and counselling to drug addicts, explain how you will deploy it to ensure maximum adoption by the target population. [6 marks]
- g) There are many software required during android programming, state atleast two IDEs that are frequently used. [2 marks]

### QUESTION TWO [20 MARKS]

- a) All subclasses of Activity class must implement two important functions, discuss these methods. [4 marks]
- b) Discuss two main types of intents. [4 marks]
- c) Explain how you will deliver intents to the following component.
  - i) Start an activity [1 mark]
  - ii) Start a service [1 mark]
  - iii) Deliver a broadcast [1 mark]
- d) Consider the following canvas (2D graphics).

```
public class MainActivity extends Activity {  
    @Override  
    protected void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        Button myButton = new Button(this);
```

```
myButton.setText("Press me");
myButton.setBackgroundColor(Color.YELLOW);
```

```
RelativeLayout myLayout = new RelativeLayout(this);
myLayout.setBackgroundColor(Color.BLUE);
```

```
myLayout.addView(myButton);
setContentView(myLayout);
```

```
}
```

```
}
```

- i) Explain the above code. [4 marks]
- ii) Modify it by adding circle and squares separately. [4 marks]
- iii) Add text in the shape of circle. [1 mark]

### QUESTION THREE [20 MARKS]

- a) Using examples, explain the building blocks, intents and services. [4 marks]
- b) Discuss android system architecture. [6 marks]
- c) Explain the purpose of the following manifest. [4 marks]

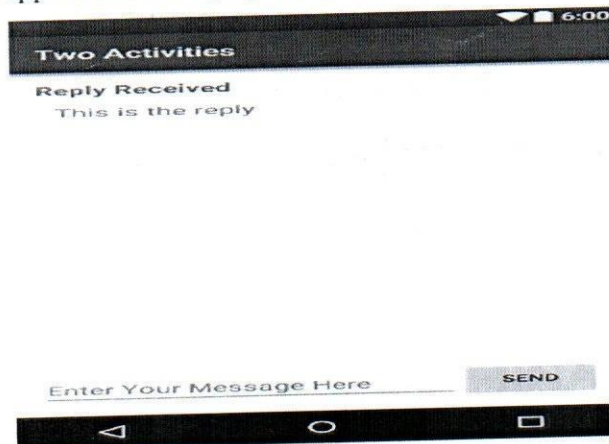
```
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
package="com.google.android.app.myapplication" >
<uses-permission android:name="android.permission.RECEIVE_SMS"/>
</manifest>
```

- d) Write an Android application, "Where am I" to return the location. [6 marks]



#### QUESTION FOUR [20 MARKS]

- a) Mobile application user interface is totally different from traditional application user interface. Explain the differences that exists. [4 marks]
- b) Menus are very important building blocks of mobile application user interface.
- i) Describe two kinds of interfaces supported by android. [2 marks]
- ii) Explain how to add menu in an android application with example. [6 marks]
- c) Write an android application to display the following interface. [8 marks]



#### QUESTION FIVE [20 MARKS]

- a) Security of any application is critical. Explain security measures that can be employed in android application. [6 marks]
- b) Describe how you will distribute your application after development. [4 marks]
- c) The end goal of mobile application development is a product that will give economic and social gain. Discuss how you will monetize your application. [6 marks]
- d) Discuss emerging issues in mobile application development. [4 marks]