



UNIVERSITY EXAMINATIONS: 2025/2026
EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN
INFORMATION TECHNOLOGY
BIT305/BBIT305
MOBILE APPLICATION DEVELOPMENT
END TERM EXAMINATION

EXAM DATE: MONDAY 15TH DECEMBER 2025 TIME: 8:30AM-10:30AM
DURATION: 2 HOURS

INSTRUCTIONS: Question One is Compulsory, Choose Three Other Questions

SECTION A (COMPULSORY)

QUESTION ONE (15 Marks)

- a) As an expert in mobile application development, explain two ways to stay updated on mobile security trends. (2 Marks)
- b) Describe the following layouts in the context user interface of a mobile application. draw a diagram for each case to demonstrate your understanding. (2 Marks)
 - i) Relative Layout
 - ii) Frame layout
- c) A systems development company has consulted you to execute a mobile application testing on their new developed application before deployment. Describe two technical criteria you will consider while selecting a test automation tool. (4 Marks)
- d) Mobile applications can be broadly categorized into several types based on their functionality and purpose. Discuss the categories of mobile applications.(4 Marks)
- e) Discuss the core function of a manifest XML file in mobile programming.(3 Marks)

SECTION B: (ANSWER ANY THREE (3) QUESTIONS IN THIS SECTION)

QUESTION TWO (15 Marks)

- a) Discuss the future of mobile application development in light of technologies such as 5G, Artificial Intelligence, and IoT. Critically evaluate the challenges and opportunities these bring for developers and users. (8 marks)
- b) Below code is an extract from android studio environment, Explain which button is the codes to be attached to. (3 Marks)

```
dialog = new Dialog(this);
dialog setContentView(R.layout.custom_dialog);
dialog.setTitle("Custom Dialog");
Button cacle_btn = (Button) dialog.findViewById(R.id.cacle_btn);
dialog_btn.setOnClickListener(new View.OnClickListener()
{
    // Perform button logic
    dialog.dismiss();
})
```

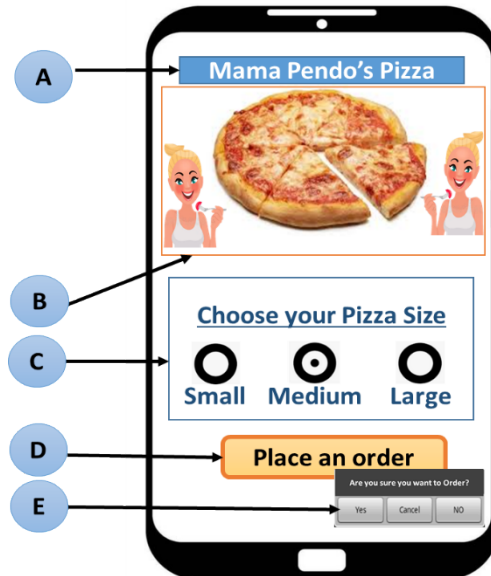
- c) Discuss four android application components (4 Marks)

QUESTION THREE (15 marks)

- a) A financial services company is launching a mobile banking app. Management wants it to be feature-rich and engaging, but you are concerned about security and performance. Critically discuss four ways on how you would balance innovation with user trust and reliability. (8 marks)
- b) write the xml code to produce a login page with the following elements. (7 marks)
- textfield-name
 - textfield-password
 - submit button
 - cancel button

QUESTION FOUR (15 marks)

a) Figure 1 shows user interface elements of an Android mobile app used by Mama Pendo Pizza business establishment. Study the figure and answer the questions that follow.



- i) Identify the role of the user interface elements labeled A, B, and C and write the XML code snippets that implements each of the elements (7 marks)
- ii) When the user clicks the button labeled D, the feature labeled E immediately appears on the screen. Describe the role of feature E and write the Java or Kotlin code snippet that causes it to appear on the screen (4 marks)
- b) As an expert in mobile application development, discuss two ways to stay updated on mobile security trends. (4 Marks)

QUESTION FIVE (15 Marks)

- a) write java codes to show how the following classes are inherited from their main class in android programming. (3 marks)
- Services
 - activity
- b) Name any 3 non-functional requirement in android app development (3 marks)

- c) Describe the functional difference between the user interface elements labeled M and N and write the Java or Kotlin code snippets that defines the logical operation of each element (6 marks)

QUESTION SIX (15 Marks)

- a) Describe two types of Mobile Apps by Technology (2 Marks)
- b) A mobile banking app must prevent MITM attacks. Propose a security architecture involving certificate pinning, TLS 1.3, and encrypted tokens. (3 marks)
- c) Suppose you need to execute a mobile application testing, describe four technical criteria you will consider while selecting a test automation tool? (4 Marks)
- d) Explain the meaning of the following lines of code in the context of mobile programming. (6 Marks)

Java Code

```
public class Lab2 extends Activity {  
    public void onCreate (Bundle savedInstanceState)  
    { super.onCreate(savedInstanceState);  
      TextView view = new TextView(this);  
      view.setText("Fresher's Night is on Friday 11th March 2022 \n");  
      setContentView(view);  
    }  
}
```

Kotlin code

```
class Lab2 : Activity() {  
    override fun onCreate(savedInstanceState: Bundle?) {  
        super.onCreate(savedInstanceState)  
  
        val view = TextView(this)  
        view.text = "Fresher's Night is on Friday 11th March 2022 \n"  
        setContentView(view)  
    }  
}
```

}