The Open University of Sri Lanka
Faculty of Engineering Technology
Department of Electrical & Computer Engineering

721

Study Programme	: Bachelor of Software Engineering Honours
Name of the Examination	: Final Examination
Course Code and Title	**: EEI3269 Introduction to Mobile Application Development**
Academic Year	: 2021/2022
Date	: 29th June 2022
Time	: 1000 -1300hrs
Duration	: **3 hours**

General Instructions

1. Read all instructions carefully before answering the questions.
2. This question paper contains four (**04**) questions. Answer **all questions** in the paper.
3. This is a closed book test.
4. Answers should be in clear handwriting.

Question 1 [20 Marks]

1. Write down **four** stages of the UI design process and briefly explain. **(4 Marks)**
2. Briefly explain the given types of application requirements. **(6 Marks)**
   (a) Domain Requirements b) Functional Requirements c) Non-Functional Requirements
3. Write down the **three** layers of the Mobile Operating System and briefly explain about Android operating system architecture. **(6 Marks)**
4. What is a DVM in Android application development? List down **two** functions of DVM? **(4 Marks)**

Question 2 [20 Marks]

1. The tools are needed for mobile application development. Give **four** reasons for using a tool in mobile application development. **(4 Marks)**
2. Mobile application security focuses on the software security posture of mobile apps on various platforms. Write down **three** ways to prevent mobile apps from attackers and explain them. **(6 Marks)**
3. Briefly explain below given cross-platform development tools **(4 Marks)**
   (a) Coding platforms (b) No-coding platforms
4. What is a mobile application framework? Write down **two** popular frameworks and give **two** features of each framework. **(6 Marks)**

Question 3 [20 Marks]

1. Write down **two** prerequisites for publishing an android application in Google store. **(2 Marks)**
2. Write down **three** steps to publish your iOS app in Apple store. **(3 Marks)**
3. Briefly **explain** below given mobile application monetization strategies **(6 Marks)**
   (a) In-app purchase model (b) Subscription model
4. Mobile ads are playing a major role in monetization. What is mobile advertising? **(3 Marks)**
5. The first stage of mobile advertising is to define the Key Performance Indicators (KPI) and metrics for mobile ads. Briefly **explain** below given popular metrics.
   (a) CPC (b) CPI **(6 Marks)**

Question 4 [40 Marks]

The case for Question 4: The Ceylon Electricity Board wants to build an innovative and modernized mobile application to offer revolutionized service to Sri Lankans. The application should be provided improved control and visibility over consumers' Electricity accounts and deliver the following services to end consumers.

- Customers should be able to login and if they don't have an account, they should be able to register themselves using their CEB account number.
- Customers should be able to lodge a complaint with their location and they should be provided with a complaint number to track their complaints.
- The application should notify the customer about the power outages, and it should send a message to the customer 15 minutes before the outage.
- The application should have an option to check the current invoice or past invoices of the customer.
- Customers should be able to navigate to all the above functions using the main dashboard.

1. Briefly explain UI and UX terms using **two** simple examples based on this scenario. **(4 Marks)**
2. Draw the wireframes only for **three** UIs of this application, considering all aspects of customers' perspectives. Write down your assumptions based on the given answer. **(6 Marks)**
3. List down **two** principles of mobile application design that must be considered while building above mobile applications. Briefly explain and justify your answer? **(4 Marks)**
4. Write down **three** steps of the mobile application development cycle and explain the steps using the above scenario. **(6 Marks)**
5. The development team decided to implement this application using React Native. You have been selected as a mobile application developer for the proposed mobile app development. As a developer you are requested to fill the blanks using appropriate React Native components. **(Write down the answers in the provided answer book in the given order)** **(2*10 =20 Marks)**

```
import (_____(a)_____) from 'expo-status-bar';
import React,{useState  } from 'react';
import { StyleSheet, TextInput, View,Image,TouchableOpacity,Text } from (_____(b)_____);

export (_____(c)_____) function App() {
  const [email, setEmail] = (_____(d)_____)('');
  const [password, setPassword] = (_____(e)_____)('');
return (
    <View style={styles.(_____(f)_____)}>
      <Image source ={(_____(g)_____)("./assets/ousl.png")}/>

      <View style={styles.inputView}>
        <(_____(h)_____)
          style={styles.TextInput}
          placeholder="Email ID"
          placeholderTextColor="black"
          onChangeText={(email) => setEmail(email)}
        />
      </View>

      <View style={styles.inputView}>
        <(_____(i)_____)
          style={styles.TextInput}
          placeholder="Password"
          placeholderTextColor="black"
          secureTextEntry=(_____(j)_____)
          onChangeText={(password) => setPassword(password)}
        />
      </View>

      <TouchableOpacity>
        <Text style={styles.forgot_button}>Forgot Password?</Text>
      </TouchableOpacity>

      <TouchableOpacity style={styles.loginBtn}>
        <Text style={styles.loginText}>LOGIN</Text>
      </TouchableOpacity>

      <TouchableOpacity style={styles.loginBtn}>
        <Text style={styles.loginText}>MENU</Text>
      </TouchableOpacity>

    </View>
  );
```