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

Study Programme	: Bachelor of Technology Honours in Engineering
Name of the Examination	: Final Examination
Course Code and Title	**: EEX3269** **Introduction to Mobile Application Development**
Academic Year	: 2021/22
Date	: 14th February 2022
Time	: 13:30-16:30hrs

General Instructions

1. Read all instructions carefully before answering the questions.
2. This question paper consists of **Four (4)** questions on **Five (5)** pages.
3. Answer all questions in the paper.
4. Answer for each question should commence from a new page.
5. Attach Page No. 3 of the question paper, answers to Question No. 2 part (E), to your answer book.
6. This is a Closed Book Test **(CBT).**
7. Answers should be in clear handwriting.
8. Do not use red colour pen.

Question 01

A. Mobile Ads play a major role in monetization. Briefly explain what is referred to as mobile advertising

(2 marks)

B. The first stage is to define the Key Performance Indicators (KPIs) and metrics for mobile ads. Briefly **explain** below given popular metrics.

- CPC
- CPI
- CPL

(6 marks)

C. Briefly explain the word **mobile monetization**? If you develop a mobile application for the Open University of Sri Lanka's marketing division, which monetization method will choose? Briefly explain why.

(5 marks)

D. Briefly **explain** below given mobile application monetization strategies
   - In-app purchase model
   - Subscription model
   - Freemium model

(3 marks)

E. Explain **four** UI components of react native mobile application. **(4 marks)**

Question 02

The Airport & Aviation Services (AAS) (Sri Lanka) Limited wants to implement a new application to ease traffic congestion in and around the Bandaranaike International Airport (BIA) as the number of tourists is getting elevated day by day. AAS decided to implement a new mobile application to help tourists.

- Tourists should be able to login, and if they don't have an account, they should be able to register themselves using their passport number and credit/debit card number.
- Tourists should be able to book a vehicle before their arrival.
- The application should notify the tourists if the vehicle has arrived.
- Tourists should be able to cancel the vehicle, but if they cancel the vehicle 15 minutes before their journey, a fee of 1500 LKR will be deducted from their account. This should be notified upon their booking
- The application should notify the tourist about the traffic around BIA.
- Customers should be able to navigate to all the above functions using the main dashboard.

A. Briefly explain UI and UX terms using **two** simple examples from this scenario.

(4 marks)

B. Draw the mindmap for this application, considering all aspects of tourists' perspectives. Write down your assumptions based on the given answer.

(6 marks)

C. List down **three** stages of the UI Design process and **explain** those using the above application.

(3 marks)

D. Write down **four** functional and **three non**-functional requirements for the above mobile application

(7 marks)

E. Fill in the blanks using appropriate components. **Attach Page No. 3 of this paper to your answer book.**

(20 marks)

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

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

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

      <View style={styles.inputView}>
        <(__________)
          style={styles.TextInput}
          placeholder="Password"
          placeholderTextColor="black"
          secureTextEntry=(__________)
          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>
  );
```

Question 03

A. Briefly explain the frameworks and tools required for mobile application development using your own words.

(4 marks)

B. Prototyping is one of the important stages of mobile application development. What is prototyping?

(3 marks)

C. Mention **two** existing Mobile Operating Systems and list down **two** advantages and **two** disadvantages of those mobile Operating Systems.

(6 marks)

D. What is a DVM in Android application development? List down **two** functions of DVM.

(3 marks)

E. Operating system works as a communication medium between various components of the computer. Even though an OS executes all the functions in a computer, we consider only four of them to be the main functions of an OS. Write down those four functions.

(4 marks)

Question 04

A. Write down **three** types of cross-platform development tools and explain any **two** in your own words.

(6 marks)

B. Write down **three** behaviours of React Native and give two examples of popular react native users.

(3 marks)

C. Write down **two** prerequisites for publishing an android application in the Google store.

(2 marks)

D. Write down **three** steps to publish your iOS app in Apple Store.

(3 marks)

E. 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)

End of the Paper