

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



Study Programme	: Bachelor of Software Engineering Honours
Name of the Examination	: Final Examination
Course Code and Title	: EEI4361 – User Experience Engineering
Academic Year	: 2022/23
Date	: 26 th May 2023
Time	: 0930-1230hrs
Duration	: 3 hours

General Instructions

1. Read all instructions carefully before answering the questions.
2. This question paper consists of **Three (03)** questions in **Two (2)** pages.
3. Section A has three questions. Answer should be written in the answer book provided.
Answer for each question should commence from a new page.
4. This is a Closed Book Test (CBT).
5. Answers should be in clear handwriting.
6. Do not use a red pen.

Section A (Essay Questions) Answer All Questions

Case 1

A FITtech company is developing a mobile app, called FitFriend to assist users in tracking fitness activities, setting goals, and staying motivated. Their aim is to create a seamless and engaging user experience that encourages the adoption of healthy habits and the achievement of fitness goals. The app should allow users to create profiles and customize fitness preferences, guide them through an intuitive onboarding process, and capture basic information, fitness goals, and health considerations. It should also include activity tracking features for various exercises like running, cycling, and strength training, with real-time feedback and statistics to monitor the progress. Users can connect and engage with fellow app users to foster community and support, share achievements and workouts on social media, and participate in challenges and competitions with friends and other users.

Question 1 [50 Marks]

Answer following questions referring to the above given 'Case 1'.

- A. You are supposed to identify a list of activities FitFriend would perform and draw a task analysis for the system including Task Hierarchy Diagram. [10 Marks]
- B. Create a persona for an example user. [5 Marks]
- C. Draw a selected three main prototype screen designs for the system.
You are supposed to describe the colors, font details and other controls used in the prototype screens with the justifications. [15 Marks]
- D. Briefly explain the terms "Cognitive walkthrough" and "Heuristic evaluation". [5 Marks]
- E. How are you planning to use techniques explained in above section (D) to evaluate prototypes you have designed? You need to list the identified heuristics out of 10. [15 Marks]

Question 2 [25 Marks]

Answer the following questions referring to the above given 'Case 1'.

- A. Design thinking is a human-centered approach to problem-solving and innovation. List two key principles of design thinking and discuss how it can be applied to improve the user experience of the FitFriend application. [6 Marks]
- B. Briefly explain the term "Multistore Model of Memory" and its components. [5 Marks]
- C. As a professional in the subject matter, provide guidance to FITtech company on developing the FitFriend mobile application while adhering to the principles of the Multistore Model of Memory. [14 Marks]

Question 3 [25 Marks]

Answer the following questions referring to the above given 'Case 1'.

- A. Explain the concept of mental models in the context of mobile application development. [5 Marks]
- B. Discuss how designers can use users' existing mental models to create intuitive and user-friendly mobile interfaces. [5 Marks]
- C. Briefly explain the term "Gulf of Execution" and "Gulf of Evaluation" and how can FITtech use the concepts in FitFriend mobile application development. [10 Marks]
- D. Discuss the importance of conducting Usability Testing in FitFriend mobile application development. [5 Marks]

-End of the Paper-