

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
<b>Course Code and Title</b>	<b>: EEI4361/ EEI5361 – User Experience Engineering</b>
Academic Year	: 2020/21
Date	: 28 <sup>th</sup> December 2021
Time	: 0930-1230hrs
Duration	: <b>3 hours</b>

### General Instructions

1. Read all instructions carefully before answering the questions.
  2. This question paper consists of **Twelve (12)** questions in **Five (5)** pages.
  3. Answer All questions.
  4. **Section A has 10 questions and carry 20 marks. Answer should be marked in the answer sheet provided.**
  5. **Section B has two questions. Answer should be written in the answer book provided. Answer for each question should commence from a new page.**
  6. This is a Closed Book Test (CBT).
  7. Answers should be in clear handwriting.
  8. Do not use red colour pen.
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## Section A

### Multiple Choice Questions [20 Marks]

Select the most suitable answer.

1. Which user interface is used to make an input by typing a string using the keyboard?
  - a. Menu interface
  - b. Command line user interface
  - c. Graphical user interface
  - d. Natural language interface
  
2. How can a client consider whether a product is successful?
  - a. if the product is usable by humans.
  - b. if the product useful for humans.
  - c. if the product is used by humans.
  - d. All of the above answers.
  
3. The 'heuristic' is a technique to solve problems in a fast and practical way in User Experience Design. The Nielsen-Molich heuristics showcase a list of tasks a system should do in order to maintain usability in the design. Identify the wrong statement which design should not have:
  - a. Give a language help for errors and solutions.
  - b. Have clutter.
  - c. Always keep the user inform about the state.
  - d. Be consistent.
  
4. Select the correct statement describes the goal-directed persona.
  - a. It should be described the users role in their or organization life.
  - b. It should be brainstormed by UX team with prior experience about the user base
  - c. It should be designed to be as engaging as possible for designers so that users are perceived as real.
  - d. It should describe what user wanted to do.
  
5. In usability testing experiments are carried out with \_\_\_\_\_ users
  - a. real test
  - b. expert
  - c. evaluation script
  - d. intelligent

6. When to not use the cognitive walkthrough method in HCI?
  - a. During the initial evaluation of a system.
  - b. At the first usage.
  - c. When a system frequently used by a user.
  - d. At low budget.
  
7. Hierarchical task analysis is conducted for;
  - a. task decomposition.
  - b. factoring.
  - c. load balancing.
  - d. task simplification.
  
8. What can be considered as "prototypes" ; There can be more than one answer.
  - a. Interactive sketches.
  - b. Beta versions.
  - c. Paper mock-ups.
  - d. Conceptual models.
  
9. "User interface designers determine whether a user interface will cause a problem for users by testing the interface with users and watching whether problems can be observed or are reported by users."
  - a. Above statement is right.
  - b. Above statement is wrong.
  
10. Iteration is important in the design process. Why is it?
  - a. All the given answers are correct
  - b. All the given answers are wrong
  - c. Iteration helps to generate and improve solutions only once for better output
  - d. Iteration helps to frequently reanalyze the problem

## Section B

### (Essay Questions) Answer All Questions

#### **Case 1**

We called “Open and Distance Learning (ODL)” when learning opportunities are provided to anyone, anywhere, and any time with open and flexible access. Students in a university learning activities are conducted in ODL method and not required to be physically present at the university every time as in conventional universities. However, for specific activities such as laboratory works, practical sessions, design classes, or for examinations students may have to participate in-person. Due to that, hostel facility provided for the ODL universities are bit complicated when compared with conventional universities, as we have to deal with volatile data. Therefore, you are asked to develop an “Online Temporary Residential Facility Reservation System,” to manage the activities carried out in a hostel maintained under ODL system university. Having an online hostel reservation system helps to cater for the high number of students increasing every year. The web site should be designed to allow users to move throughout the site and encourage them to use it effectively by building the confidence. Only students who meet the following criteria will be eligible for temporary accommodation at the hostel premises.

A student:

- whose address as indicated in the Student Record Book is more than 50 km from the Colombo Regional Centre (CRC) [or more than 25 km from Kandy and Matara Regional Centre] and,
- who has to attend laboratory activities, basic training activities, survey camps, and any other field work or any other compulsory activities, requiring overnight stay including CA tests, final examinations, day schools, and other scheduled academic activities,
- Who has obtained the approval from the relevant authorities, to make the request for temporary accommodation.
- A student is entitled to use the accommodation for a maximum of sixty (60) days, in an academic year, but not more than six (06) consecutive nights at a time and, stay in the TRF four days prior to the final examination / CATs.

Currently the university has manual booking system to reserve a room in the hostel. In order to reserve a room at hostel premises student should come to university and must do the followings,

- Fill up the reservation form.
- Hand over it to the Students Affair Division and confirm the distance initially.
- And then make the necessary payment at the Finance Division.
- Once these are completed a Hostel Card (TRF Card) Will be issued by the Student Affair Division.
- Then the student must indicate the intended purpose and the dates for which the accommodation is sought with approval given by an academic from the relevant department.

- Availability of accommodation must be checked with the Sub-warden and booking is to be made in person confirmed by the sub warden at the TRF office at the time of checking.

## Question 1 [60 Marks]

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

- A. Draw the task analysis for the system including Task Hierarchy Diagram. (5 Marks)
- B. Create a persona for an example user. (10 Marks)
- C. Draw prototype screen designs for the system. (10 Marks)
- D. Describe the colors, font details and other controls used in the prototype screens and justify your choice. (10 Marks)
- E. How do you use cognitive walkthrough and heuristic evaluation techniques to evaluate these prototypes? (10 Marks)
- F. "HCI systems should be designed to help users from correct productive mental models". Explain the factors which are related to good design. (10 Marks)
- G. Describe the three of the interface metaphors used in computer applications. (5 Marks)

## Question 2 [20 Marks]

In a usability testing, experiments are carried out with real test users to obtain specific information about an interface.

- A. Describe the purposes and benefits of conducting usability testing. (5 Marks)
- B. Explain key stages in conducting the usability test. (10 Marks)
- C. Describe two main usability testing methods. (5 Marks)

~End of the Paper~

