

THE OPEN UNIVERSITY OF SRI LANKA
DEPARTMENT OF ELECTRICAL & COMPUTER ENGINEERING
BACHELOR OF SOFTWARE ENGINEERING

041



ECI5161 - HUMAN COMPUTER INTERACTION

FINAL EXAMINATION - 2015/ 16

CLOSED BOOK

Date: July 10, 2016

Time: 09.30 – 12.30 hrs

READ THE FOLLOWING INSTRUCTIONS BEFORE ANSWERING THE PAPER

Instructions:

Answer **question 1** in **Part A** and **any 2 questions** from **Part B**

Part A (Compulsory question) 50 marks

Question 1

Suppose you are asked to develop an interactive web site for the library in your university. Users of the web site are students of the university. They would be able to register with the web site using their registration number and email address. Once it is reviewed and approved by the system administrator, user name and password will be email to them. Students will be able to view available books in the library, make renewal fees of the library membership using their credit cards, download videos and e-books from the web site. 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.

- (a) Draw the task analysis for the system including Task Hierarchy Diagram. (10 marks)
- (b) Create a persona for an example user. (10 marks)
- (c) Draw five 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)

Part B (Answer only 2 questions, each question carries '25' marks)

Question 2

- (a) What is interaction design? (3 marks)
- (b) Name Shneiderman's Eight Golden Rules and explain how each of the above rules may be applied in a UI design using suitable examples. (16 marks)

(c)



The above image shows the screen shot of the home page of OUSL web site. What are the good and bad features (write three features for each) of the above image with respect to the user interface design?

(6 marks)

Question 3

- (a)
- I. Briefly explain what is meant by the terms perception, physiology and cognition. (6 marks)
 - II. Name five interdisciplinary domains of HCI and explain how each of them has made contributions to HCI. (5 marks)
- (b) Describe three populations of users with special needs. For each of these populations, suggest three ways how the current interfaces could be improved to address their usability. (6 marks)
- (c) You have been asked to help in the development of a new computerized call center. Customers from a National Bank will ring up if they wish to change the details of their account. For instance, they might want to open a new account, close an old account, they might want to change the address of the person who owns the account and so on. Briefly explain how you might use two different requirements elicitation techniques to identify the potential usability problems that might arise for end users with this new system. Identify the principle strengths and weaknesses of each technique. (8 marks)

Question 4

- (a) Write down four elements of WIMP interface and discuss them briefly. (8 marks)
- (b) User Centered Design (UCD) is used to encompass a variety of methods followed by HCI practitioners (and others).
- I. Explain the design phase of the User Centered Design (UCD) by giving all the steps and activities carried out. (4 marks)
 - II. What are the issues that are faced when following User Centered Design (UCD)? (3 marks)
- (c)
- I. Describe three problems that you might have to consider when identifying the potential users of a commercial web site selling expensive, 'top of the range' mobile phones. (6 marks)
 - II. Select one of the above problems and describe in detail how you would address that problem so that it does not undermine the successful design of the web site. (4 marks)