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

ECI5161 Human Computer Interaction

Final Examination – 2013/2014 **(Closed Book)**

Date: 6th April 2014	**Time: 9.30 – 12.30**

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

Part A (Compulsory Question) 50 marks

Question 1

A Municipal Council needs to offer online payment facilities to its tax payers. To login to the proposed web site, tax payers are required to enter the given account number and the password. The tax categories for which this online payment could be made are the following:

(1) Tax for rates of payments

(2) Trade tax

(3) Tax on businesses

(4) Market rental tax

The web site should be designed to allow users to move throughout the site and encourage them to pay the relevant taxes online.

a) Draw the Task Hierarchy Diagram based on the user analysis and task analysis. (10 marks)
b) Create a persona for a common user. (10 marks)
c) Draw prototype screen designs for the system. (10 marks)
d) Describe the colours, font details and other controls used in the prototype and justify your choices. (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 key part of cognitive psychology is to develop models of human behaviour. One of the more useful models is called the 'Model Human Processor'.

a) Explain the main components of the Model Human Processor. (15 marks)

b) Name two differences between short and long term memory. (10 marks)

Question 3

a) Discuss how a poor interface design can distract the user and what a user expects in good interface design. (10 marks)

b) What is a prototype? Describe the types of prototypes in detail. (10 marks)

c) What impact does perception has on human-computer interaction? (5 marks)

Question 4

Ubiquitous computing or pervasive provides new opportunities and poses new challenges to software development and the usability evaluation. According to Mark Weiser who invented this term, ubicomp 'enhances computer use by making many computers available throughout the physical environment, while making them effectively invisible to the user'.

A major purpose in ubicomp is to explore new forms of interaction not just between a person and a device, but also between a person and the set of devices.

1) Describe Ubiquitous computing (ubicomp) with examples. (15 marks)

2) When designing interfaces and interactions for such systems what are the challenges it involves for the conventional software development and usability evaluation? (10 marks)