



**UNIVERSITY OF COLOMBO, SRI LANKA**

**UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING**

**DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY (EXTERNAL)**

**Academic Year 2014/2015 – 2<sup>nd</sup> Year Examination – Semester 3**

***IT3405: User Interface Design (Model Paper)***  
***PART 2 - Structured Question Paper***

**01<sup>st</sup> March, 2015**  
**(ONE HOUR)**

**To be completed by the candidate**

BIT Examination Index No: .....

**Important Instructions:**

- The duration of the paper is **1 (one) hour**.
- The medium of instruction and questions is English.
- This paper has **3 questions** and **09 pages**.
- **Answer all questions.** All questions **do not** carry similar marks.
- **Write your answers** in English using the space provided **in this question paper**.
- Do not tear off any part of this answer book.
- Under no circumstances may this book, used or unused, be removed from the Examination Hall by a candidate.
- Note that questions appear on both sides of the paper.  
If a page is not printed, please inform the supervisor immediately.

**Questions Answered**

Indicate by a cross (×), (e.g. 

×
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) the numbers of the questions answered.

To be completed by the candidate by marking a cross (×).	Question numbers		
	1	2	3
To be completed by the examiners:			

- 1) (a) List main components of interaction model. Describe how these components communicate with each other. (Marks 10)

**ANSWER IN THIS BOX**

User, Computer and interaction. User is communicating his requirements through the interface to obtain the service of the computer. After the processing, the computer communicates the feedback/results through the interface in a format understandable to user. This process of communication is described as the interaction.

- (b) Name **three ways** to extend the interface of a device. Describe briefly the possible reasons to extend a particular interface? (Marks 10)

**ANSWER IN THIS BOX**

Simplification, Customization, Personalization, Multiple ways,  
The given interface may have been designed considering all users of the system. However, we can observe different user groups as well as different requirements with respect to individuals or work task. These ways will help to identify them.

- (c) Write a short composition about the inventor of the mouse. ( Marks 10)

**ANSWER IN THIS BOX**

- 2) (a) What is FITTS Law? Explain its applicability in the screen design. ( Marks 10)

**ANSWER IN THIS BOX**

$$Mt = a + b \log_2 (D/S + 1)$$

where: a and b are empirically determined constants

Mt = movement time, D = Distance, S = Size of target

It is hard to hit smaller objects irrespective of distance. It is easier to hit larger objects and only distance from the mouse point ( starting location) affects the movement time. Therefore it is better to design targets as large as possible and distance as small as possible.


- (b) What is Perceptual computing? Given an example to demonstrate it in the desktop environment.

(Marks 10)

**ANSWER IN THIS BOX**

Perceptual computing uses the technology to identify the voice commands, user's gesture and facial recognition to provide the natural user interaction compared to traditional direct input based (keyboard, mouse,...) interaction. For example, when the user is not using a computing for a given period of time, the screen/monitor is automatically switched off and this happens without direct input and based on the monitoring of user input.

- (c) What is a “slip” that occurs when a person interacts with a computer? (Marks 5)

**ANSWER IN THIS BOX**

It is due to unconscious behavior that happens when we interact with things while attending several things and/or thinking something else.

- (d) What are the key elements of WIMP interfaces? How do widget support WIMP interfaces? (Marks 5)

**ANSWER IN THIS BOX**

Key elements: windows, icons, menus, pointers

Widgets are supporting elements that improve the interaction of key WIMP elements.

- 3) Consider the prototype screen design given below to answer following questions.

**Contact Form**

Name

Email

Message

- (a) Identify two design errors (Marks 6)

**ANSWER IN THIS BOX**

Adequate information about the purpose of this form is not given in the top. (e.g. when and why this forum should be used).

Labels are not very descriptive. (e.g. Whatever full name or Name with initials).

Poor alignment compared to width of screen (e.g. labels should be aligned on top of text box)


(b) Describe two possible usability issues in this design (Marks 6)

**ANSWER IN THIS BOX**

The user may not be able to see full message he is going to type.  
If the user wants to cancel entering the data, he will not be able to do so.

- (c) Suggest how to improve the user interface design of this data entry form (Marks 12)

**ANSWER IN THIS BOX**

Centre the title of the form and underline it.

Write a phrase describing the objective of this form.

Place the labels on top of text fields

Rename the labels to avoid any confusion

Place the cancel button on the bottom

Place buttons on the right side



- (d) Draw a sketch of the redesigned interface based on your suggestions (Marks 16)

Contact Form

If you need additional information about our services please send your message to our staff with an email address.

Your Name with initials (e.g. S. T. Perera)

A valid email address (e.g. stp@gmail.com)

Please describe your requirement within 250 words

Cancel Submit

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