CONFIDENTIAL

Faculty of Computing

FINAL EXAM SEMESTER I 2014/2015

SUBJECT CODE	:	**SCSV2113**
SUBJECT NAME	:	**HUMAN COMPUTER INTERACTION**
YEAR/PROGRAM	:	**2SCSD, 2SCSJ, 2SCSR, 2SCSV,**
DURATION	:	**3 HOURS**
DATE	:	
VENUE	:	

(INSTRUCTION TO CANDIDATE) :

THIS EXAMINATION BOOK CONSISTS OF TWO PARTS:

- **PART A: 9 SHORT ANSWER QUESTIONS** **(40 MARKS)**
- **PART B: 4 STRUCTURED QUESTIONS** **(60 MARKS)**

ANSWER ALL QUESTIONS INTO ANSWER BOOKLET PROVIDED.

(Please write your lecturer name and section in your answer booklet)

Name	
IC	
Year/Program	
Section	
Lecturer Name	

THIS PAPER CONSISTS OF **4** PAGES EXCLUDING THIS PAGE.

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PART A: SHORT ANSWER QUESTIONS [40 Marks]

This part consists of **nine (9) short answer questions**. Answer all questions in the answer booklet provided. The marks for each part of the question is as indicated.

1. Define the terms Human-Computer Interaction (HCI). Describe the importance of HCI in our daily life by giving appropriate examples. [6 marks]

2. List FIVE (5) usability goals. [5 marks]

3. State FOUR (4) interface types. [4 marks]

4. Define the term Affordance in relation to interface design. Give an example where this attribute can be used effectively. [4 marks]

5. Radio button and checkbox are two components that is always being used in creating online survey system. State the difference between both components and draw a figure for each component to support your answer. [4 marks]

6. Most mobile phones in the market are not designed for elderly people to use. Now, you are asked to design one for elderly users who are over 70 to be able to use easily. Propose FOUR (4) ways current mobile phones interfaces could be improved to better serve them. [4 marks]

7. Give the TWO (2) advantages and TWO (2) disadvantages of low-fidelity prototyping. [4 marks]

8. Interaction types helps provide a way of thinking about how best to support the activities users will be doing when using a product or service. State FOUR (4) interaction types. [4 marks]

9. What are the FIVE (5) key aspects of user-centered design? [5 Marks]

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PART B: STRUCTURED QUESTIONS **[60 Marks]**

This part consists of **four (4) structured questions**. Answer all questions into the answer booklet. The marks for each part of the question is as indicated.

Question 1: Usability **[15 marks]**

(a) Define the term usability. [2 marks]

(b) Based on Figure 1(a), think about the aspects of usability that you have learned in class, and give **at least one example** the aspects of this design with good usability and **at least one example** the aspects of this design that have bad usability. **Give reasons** to support your position in each case. [6 marks]

(c) Interpret the graph curve representation in Figure 1(b) and explain how would you use the related information to conduct your prototype evaluation. [4 marks]

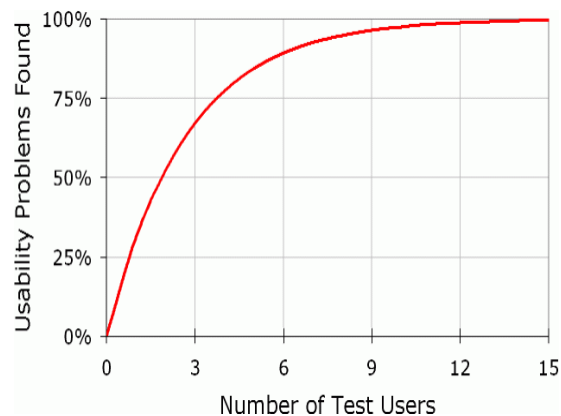(d) State THREE (3) importance of usability. [3 marks]

Figure 1(a): Master Key Lock   Figure 1(b): Graph of Usability

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Question 2: Human Interface Guidelines and Design [15 marks]

(a) Sketch an interface design for an alarm clock. You must be able to set the current time, set the alarm time, turn the alarm on or off, and snooze (temporarily turn an active alarm off to rest a few more minutes). There are no other functions or features. [6 Marks]

(b) Successful designers must be able to go beyond the intuitive judgments and look for helpful guidance. Explain **THREE (3)** user interfaces guideline of good design. Provide one example for each of them. [9 marks]

Question 3: User Centered Design [15 marks]

Figure 2 is the design for a snack vending machine that dispenses several different types of snacks. The users can see a selection of snacks through the transparent window in which several types of snacks are displayed along with the price. The steps to perform this operation are written on the vending machine.

- There are two indicators; one is to inform the users if the machine is out of order and the other one is for exact change only.
- The users need to select a snack first by pressing on the keypad to enter the code displayed under each snacks and then feed coins into the slot.
- When the users insert coins, there is a panel to display the amount of coins inserted.
- When the amount is sufficient, the selected snack will be dispensed and any unspent money will be returned.
- If at any time the users want to cancel the purchase, they can press a button and the money will be returned.

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Figure 2: Snack vending machine

(a) Define the meaning of Task Analysis. [2 marks]

(b) How does Task Analysis help with the design of user interfaces? [3 marks]

(c) Using the hierarchical task analysis (HTA), construct the task diagram and plan(s) for the process of buying a chocolate from the vending machine. [10 marks]

(Hints: You can provide your answer either in textual representation and graphical view)

Question 4: Evaluation and Usability testing [15 marks]

(a) A mobile application user experience design project often involves multiple disciplines. The members of the team range from

- designers
- web developers
- network specialists
- software engineers
- marketing managers
- business managers

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All of these 'stakeholders' have their own viewpoint on what the mobile application should looks like and how it should function. How can designers get all stakeholders to be 'on the same page', with their ideas combined and synchronized? [5 marks]

(b) Consider a design team interested in evaluating their proposed prototype design that could improve user performance and satisfaction. Briefly describe an appropriate evaluation framework that can be used by the design team. Discuss how the framework can be used to guide the evaluation process? [10 marks]