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Infrastructure University Kuala Lumpur

SUNWAY INT'L BUSINESS SCHOOL

FINAL EXAMINATION
JUNE SEMESTER 2018

HUMAN COMPUTER INTERACTION
(CSC 2200)

(TIME : 3 HOURS)

MATRIC NO. : | | | | | | | | | |

IC. / PASSPORT NO. : | | | | | | | | | | | | | | |

LECTURER : SUDEEP BAJIMAYA

GENERAL INSTRUCTIONS

1. This question booklet consists of 8 printed pages including this page.
2. Section A : Answer **ALL** Questions in the Answer Booklet
3. Section B : Answer **ANY TWO** (2) questions in the Answer Booklet.

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INSTRUCTIONS: **TIME: 3 *HOURS***

SECTION A **(60 MARKS)**

There are TEN (10) questions in this section. Answer ALL Questions in the Answer Booklet

1. Define "Human Computer Interaction".

(2 marks)

(CLO1:PLO1:C1)

2. Explain User Interface Metaphor concepts. Use an example to support your explanation.

(3 marks)

(CLO1:PLO1:C2)

3. Identify THREE (3) categories of stakeholder based on "Human Computer Interaction" perspective.

(3 marks)

(CLO1:PLO1:C1)

4. Describe THREE (3) human factors that affect how the human interact with computer. Use examples for each factors to support your answer.

   Note: use the following table format to write your answer.

Human Factors	Description	Example
1.		
2.		
3.		

(15 marks)

(CLO1:PLO1:C2)

5. Identify THREE (3) most significant senses for the average person when it comes to interacting with a computer.

(3 marks)

(CLO1:PLO1:C1)

6. Explain the main reason interface designer includes sound in an application based on Human factors pespectives.

(2marks)

(CLO1:PLO1:C2)

7. A computer expert produces a solution with HCI concept in a resources management system by using command-lines instruction for their inventory officers to use. Predict at least THREE(3) problems they will faced when the system is implemented.

(6 marks)

(CLO2:PLO2:C5)

8. Illustrate Donald Norman's Interaction Framework.

(4 marks)

(CLO2:PLO2:C3)

9. Based on your illustration in Question 8, Explain each stages involved in each interaction phase in the diagram.

(14 marks)

(CLO2:PLO1:C3)

10. Recommend FOUR (4) devices that can be used by visually impaired person.

(8 marks)

(CLO2:PLO1:C2)

SECTION B **(40 MARKS)**

There are THREE (3) questions in this section. Answer ANY TWO (2) questions in the Answer Booklet.

1. Case Study 1:

Given below is the general specifications of a mobile application for online bus ticket booking system in Malaysia.
General specifications:

- Specification, users must be able to pay online (atm card holder).
- Categorization of travellers involving insurans coverage, retriction on age.
- Best ticket selection functionality

a) Use the following table of to construct user characteristics and the design requirements they imply.

Characteristic/s	Expected Value	Requirements
Age		
Knowledge		
Culture/Language		

(12 marks)

(CLO3:PLO1:C5)

a) Design TWO (2) interfaces to illustrate the mobile application for online bus ticket booking system as discussed above.

(4 marks)

(CLO3:PLO5:C5)

b) List at least FOUR (4) Donald Norman Design Principles that you have considered for your interface design.

(4 Marks)

(CLO3:PLO5:C3)

2. Case Study 2:

Universal design in computers strives to overcome many kind of restrictions, with the aim to provide means that the computer can be used by all under all circumstances. A system builder's perspective tries to cover the requirements of the heterogeneous user group and the huge diversity of environments and situations of use. However, a complete coverage seems unrealistic and from an individual perspective a user might still identify that s/he is not able to use a computer. On the other hand every identified case of exclusion can be fed back into the development loop for future improvement. In each case the system builder needs to understand diversity rather than stereotype average users and "standard" user environments. However, universal design in computers (and information and communication technologies) does not necessarily suggest producing a one size-fits all product or service (CEUD 2009). Rather it seeks to use the flexibility and inbuilt machine intelligence to provide products and services that are usable and accessible to the widest range of people (related to the term diversity). This can also be achieved by configuration of components or software based on a standard product.

(International Encyclopedia of Rehabilitation: Dortmund University, Germany)

Based on the article above answer the following question.

a) Identify THREE (3) populations of users with special needs.

(3 marks)

(CLO2:PLO1:C1)

b) Recommends THREE (3) ways current interfaces could be improved to serve them better.

(9 marks)

(CLO3:PLO5:C6)

c) Define user centred design.

(2 marks)

(CLO1:PLO1:C1)

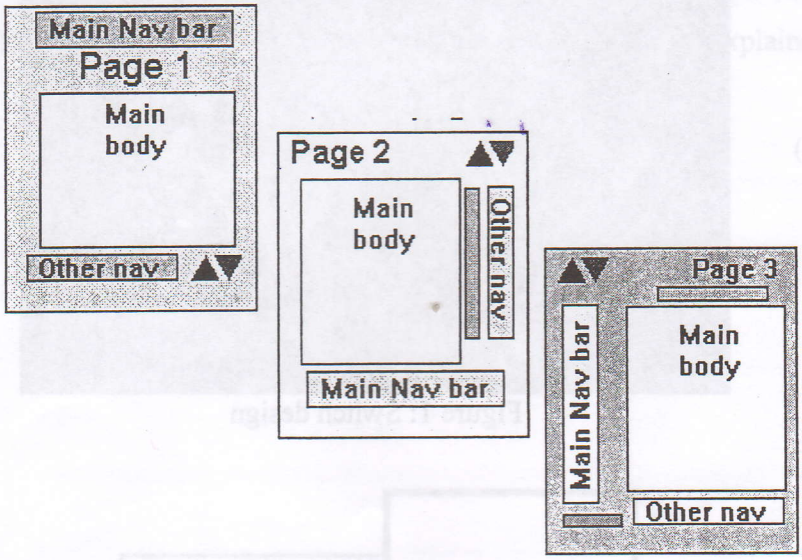
d) Explain the THREE (3) process of establishing knowledge about the users or user profiling.

(6 marks)

(CLO1:PLO1:C2)

3. Case Study 3:

a) Refer to the following wireframe interface design.



i. Evaluates the design above and writes your critiques.

(6 marks)

(CLO3:PLO5:C3)

ii. Illustrate the best way to improve the designs.

(4 marks)

(CLO3:PLO5:C3)

b) Refer to the following switch layout design (figure 1) and the area the lights arranged in a room (figure2).

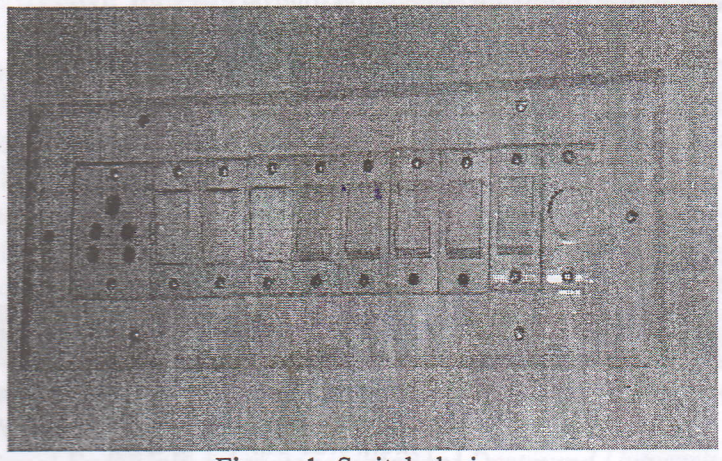


Figure 1: Switch design

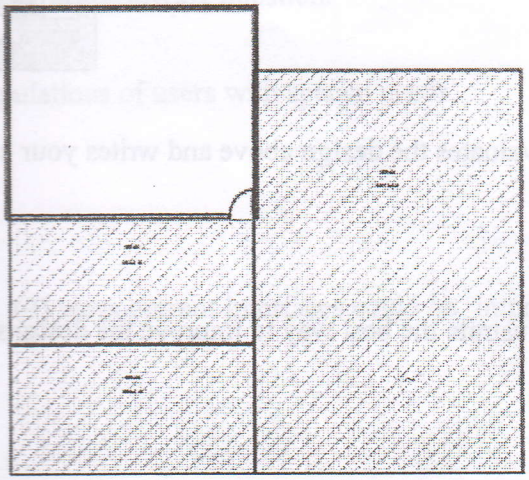


Figure 2: layout

i. Identify the mistake in the switch design

(2 marks)
(CLO3:PLO5:C3)

ii. Suggest a better design to solve the problem you found in the image.

(3 marks)

(CLO3:PLO5:C3)

c) Define Virtual affordances concept as per describe by Prof. Emeritus Don Normon (1998).

(2 marks)

(CLO1:PLO1:C1)

d) Draw an example of virtual affordances for each concept explained in (c).

(3 marks)

(CLO1:PLO2:C3)

***** END OF QUESTIONS *****