HCI Examination 02.06.04
8.45-12.45
Please answer in Swedish or English

PLEASE HAND IN FIRST PAGE OF EXAMINATION SHEET (TES) IF YOU ANSWER MULITPLE CHOICE HERE

PART I: NECESSARY FOR PASS (GODKÄNT)

1. Multiple choice – chose one of the three boxes (or write a,b, or c):
   System usability comprises the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use, where:

a	- Effectiveness measures the accuracy and completeness with which users achieve specified goals; - Efficiency measures the resources saved in relation to the accuracy and completeness with which users achieve goals; - Satisfaction measures the freedom from discomfort, and positive attitudes towards the use of the product.
b	- Effectiveness measures the accuracy and completeness with which users achieve specified goals; - Efficiency measures the resources expended in relation to the accuracy and completeness with which users achieve goals; - Satisfaction measures the freedom from discomfort, and positive attitudes towards the use of the product.
c	- Effectiveness measures the accuracy and completeness with which users achieve specified goals; - Efficiency measures the resources expended in relation to the economy and completeness with which users achieve goals; - Satisfaction measures the freedom from pleasure, and positive attitudes towards the use of the product.

2. Multiple choice – choose one of the three boxes (or write a,b, or c):
   According to Scheidermann, direct manipulation is:

a	- Continuous representation of the objects and action of interest - Physical actions instead of complex syntax - Immediate and continuous information flow
b	- Continuous representation of the objects and action of interest - Physical actions instead of complex syntax - Immediate and continuous feedback
c	- Continuous representation of objects and activities - Physical actions instead of complex semantics - Immediate and continuous feedback

3. Multiple choice – choose one of the three boxes (or write a,b, or c):
   What does a WIMP interface mean?

a	Window, icons, menus, and pointers
b	Widget, icons, menus, and pointers
c	Window, icon, mouse, and pointers

4. Give three examples of interactive systems in your everyday environment and tell why they are interactive. For one of these three systems, suggest test procedure to find out how user satisfaction can be improved.

5. Give 3 of Norman's Seven Principles for Transforming Difficult Task into Simple ones. (Name of principle and one-pharsed definition).

6. How do Shneidermann's golden rules and how do heuristics help interface designers take account of cognitive psychology? Illustrate your answer with examples.

7. What input and output devices would you use for the following systems? Chose 3 of the 6 systems and for each, compare and contrast alternatives, and if appropriate indicate why the conventional keyboard, mouse and normal (CRT) screen may be less suitable.

   a) portable word processor
   b) tourist information system
   c) tractor-mounted crop-spraying controller
   d) air traffic control system
   e) worldwide personal communications system
   f) digital cartographic system

8. Distinguish between principles, guidelines and standards, using examples of each to illustrate. b) Why is context important in selecting and applying guidelines and principles for interface design? Illustrate your answer with examples. (Help: Context refers to the physical and social situation in which computational devices are embedded).

9. Write a manual page for making a cup of coffee. Assume your user has no experience but will recognize a cup, a kettle, a spoon, etc.

PART II: NECESSARY FOR HIGHER GRADES

10. All of the following 7 principles (a-g) may support consistency. Chose 3 of the 7 (a-g) principles below, and for each, define and give an example.

    a) Familiarity
    b) Generalizability
    c) Affordance
    d) Predictability
    e) Substitutivity
    f) Commensurate effort
    g) Response time stability

11. Data visualization techniques have often increased our comprehension of phenomena. For example, think of the effect that 3D graphics has had on looking at complex models such as those of the atmosphere or the ocean, or in understanding the structure of molecules. In view of this example, please answer this question: What do you consider to be the areas that may benefit most from virtual reality visualization techniques?

12. Choose an appropriate evaluation method for 3 of the following 5 situations (situation a-e). For each of the chosen situations, identify

    (i) The participants.
    (ii) The technique used.
    (iii) Representative tasks to be examined.
    (iv) Measurements that would be appropriate.
    (v) An outline plan for carrying out the evaluation.

Situation a-e, please chose only 3 of these 5 situations:

(a) You are at an early stage in the design of a *spreadsheet package* and you wish to test what type of icons will be easiest to learn.

(b) You have a prototype for a *theatre booking system* to be used by potential theatre-goers to reduce queues at the box office.

(c) You have designed and implemented a *new game system* and want to evaluate it before release.

(d) You have developed a *group decision support* system for a solicitor's office.

(e) You have been asked to develop a system to store and *manage* student *exam results* and would like to test two different designs prior to implementation or prototyping.

Please give your answer in the following form:

Spreadsheet package:

(i) Subjects	Typical users: secretaries, academics, xxx, xxx, xxx
(ii) Technique	xxx evaluation
(iii) Representative tasks	Sorting data, printing spreadsheet, xxxx
(iv) Measurements	Speed of xxx, accuracy of xxx, user-perceived xxx
(v) Outline plan	Test the subjects with examples of each xxx in various styles, noting responses.

Theatre booking system:

(i) Subjects	
(ii) Technique	
(iii) Representative tasks	
(iv) Measurements	Qualitative measures of users' comfort with system, measures of xxx
(v) Outline plan	Present users with prototype xxx

New game system ():

Etc.