

Name: \_\_\_\_\_ Student ID Number: \_\_\_\_\_

Signature: \_\_\_\_\_

**CPSC 344 2005-06 Term 1 Midterm Exam**  
**50 minutes**

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**Exam Instructions (read carefully):**

1. **Immediately** sign the first page of the exam with your **signature** in the space provided on the upper left.
2. Print your **Name** and **Student ID** at the top of each page in the booklet **before you start working**.
3. Continue reading these instructions, but **do not open the exam booklet** until you are told to do so by a proctor.
4. **Cheating is an academic offense.** Your signature on the exam indicates that you **understand** and **agree to** the University's policies regarding cheating on exams.
5. The exam is **closed book**. There are **no aids permitted** (this includes calculators)
6. **Interpret the exam questions as written.** When in doubt, take a strict, literal interpretation of the question.
7. You have **50 minutes** in which to work (~1 min/mark). **Budget your time wisely.**
8. No one will be permitted to leave the exam room during the **last ten minutes** of the exam.

Question	Points	Received
1	9	
2	8	
3	9	
4	12	
5	12	
Total	50	

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### Question #1 [9 points total]: Matching Exercise

The terms listed immediately below are possible answers for the definitions listed lower on the page. Use the number corresponding to a term below as an answer in the space provided next to the following questions if you think it is the *best* match for that concept or definition. Each term is used either once or not at all.

- |                            |                              |
|----------------------------|------------------------------|
| (1) Focus group            | (13) Runnable model          |
| (2) Stakeholder constraint | (14) Cognitive walkthrough   |
| (3) Design model           | (15) Technology constraint   |
| (4) Origami                | (16) The myth of human error |
| (5) Heuristic evaluation   | (17) Psychopathology         |
| (6) Cast of characters     | (18) Situation of concern    |
| (7) Ethnography            | (19) Iterative design        |
| (8) Unstructured interview | (20) Hidden video recording  |
| (9) Task example           | (21) Causal relation         |
| (10) Participatory design  | (22) Transfer effect         |
| (11) Gulf of evaluation    | (23) Paper prototype         |
| (12) Popcorn               | (24) Active listening        |

For each statement below, write the number of the term from the list above that **best** fits into the missing space. [1 pt each]

- \_\_\_\_\_ (a) Example of an ‘intrusive’ tool for observing a single user (in sense of user’s immediate perception)
- \_\_\_\_\_ (b) Illustrates the logical flow of an interface design
- \_\_\_\_\_ (c) The general practice of observing users and tasks in their own context
- \_\_\_\_\_ (d) A method in which designers “identify with” the user
- \_\_\_\_\_ (e) One example is when a company owns intellectual property relating to the product being designed
- \_\_\_\_\_ (f) The designer can exploit this to promote an accessible mental model for an interface
- \_\_\_\_\_ (g) Evaluation technique especially suited for identifying ‘proto-users’
- \_\_\_\_\_ (h) An impediment to transparent goal-oriented action
- \_\_\_\_\_ (i) A metaphor that describes a particular concept generation technique

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**Question #2 [8 points total]: True/False**

For each of the 4 statements below, indicate whether the statement is true or false by **circling** either **True** or **False**. Briefly explain your answer in one or two sentences. [1 pt / correct answer, 1 pt/explanation]

- (a) Statement: Discount methods are a means of ‘simulating’ user feedback, and as such may have a lower cost.

**True      False**

Explain:

- (b) Statement: The CS344/444/543/544 ethics protocol submitted to the Behavioral Research Ethics Board at UBC allows 344 students to request participation from anyone who is clearly a stakeholder of the system being evaluated in the students’ course project.

**True      False**

Explain:

- (c) Statement: Slips are errors that are made because the user has the incorrect mental model.

**True      False**

Explain:

- (d) Statement: Questionnaires usually have a lowest cost of actual administration and analysis (per-study) of any evaluation technique.

**True      False**

Explain:

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**Question #3 [9 points total]: Discussion Questions**

(a) Describe how task examples relate to a design prototype. [3 pts]

(b) Describe “stimulus fusion”, and explain its relation to perceptual causality. [3 pts]

(c) Compare and contrast ethnography and observation. [3 pts]

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Questions 4-5 are based on the following design brief.

**“DigiCookbook”: a Cook’s Assistant for the Electronic Kitchen**

Digital Kitchens Inc. has finished most of the development of a product called *DigiCookbook*, a recipe management application that lets users:

- enter or download recipes
- search on topics such as cuisine or ingredient
- compile weekly menus
- create grocery shopping lists.

It will operate on a desktop PC; in a networked home, it will also be usable in the kitchen with simplified I/O devices, replacing a paper recipe book. *DigiCookbook* will use two sources of recipe data: a locally stored and cross-indexed database of downloaded or manually entered recipes, both capable of being annotated; and/or a large online database of recipes, available at [www.digiCookbook.com](http://www.digiCookbook.com).

*DigiCookbook* is targeted at tech-savvy families with children living in the home.

You’ve been assigned by your employer (a UI design consulting firm) to help *DigiCookbook*’s production team to refine certain aspects of their upcoming product release.

At present, *DigiCookbook* exists as (a) a functioning but aesthetically unexciting engineering prototype that simulates access to local and online recipe databases, and (b) a series of non-functioning conceptual mockups that indicate how the graphical user interface might look. The latter takes the approach of two use modes of the interface, with graded complexity:

- (1) *desk*: for I/O intensive tasks such as data entry, search, menu management, etc; user sits at a computer and uses a keyboard and mouse
- (2) *kitchen*: for simple recipe display in the kitchen while cooking; assumes ‘thin client’ connection to the desk computer, with a low-res touch screen but no separate keyboard or storage. Individual recipes, or small sets of them, can be ‘sent’ to the *kitchen* display from the *desk* terminal.

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### Question #4 [12 points total]: Interaction Models

(a) Which of these mental model types do you think a user would find most useful in the use of the 'kitchen' mode for *DigiCookbook* – and a designer should therefore choose to reinforce? **Circle one**, **justify** your response in 1-2 sentences, and **give one example** of a design element that would reinforce the type of model you've chosen. [5 pts]

state-transition model

object-action model

mapping model

metaphorical model

**Justify:**

**Example of a design element that reinforces the model in a useful way:**

(b) Identify one challenge the UI designer will face in creating a good mental model for this product (more than one good answer exists). [3 pts]

(c) Identify two reasons why users might prefer the 'old-fashioned' system consisting of a mess of bound cookbooks and paper recipe cards, over this new electronic approach. [4 pts]

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### Question #5 [12 points total]: Involving Users

You need to get a general idea of the problems with the current design for *DigiCookbook*, and to understand the basic constraints on the next iteration. Who should you talk to? There is more than one acceptable answer for this question.

In the box below, **list four primary stakeholders** who might have distinct needs, concerns and influence in this design process, taking care to identify their key attributes and abilities. The terms “family member” or “the company that manufactures the product” are too general.

Then, for each stakeholder group identified, **list one activity** that you could do as the designer, which would help you better understand how to proceed with your task. Choose the activity appropriately for the particular stakeholder and keep in mind the current prototyping status of *DigiCookbook*. The terms “observation” or “interview” are too general as answers; you must also include some sense of what you hope to gain. Do not list the same activity under more than one stakeholder (i.e. list 4 different activities).

Finally, clearly **justify the choice of activity** for that stakeholder.

Stakeholder	Activity	Justification

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**Extra page to continue work.**