Name:

Student ID Number: _____

Signature:

Fire Alarm Code: _____

CPSC 448B 1999-2000 (T2) 1st Midterm Exam

Department of Computer Science University of British Columbia K. S. Booth

Exam Instructions (Read Carefully)

- 1. Sign the first page of the exam with your **Signature** in the space provided on the upper left **immediately**.
- 2. Continue reading the instructions, but **do not open the exam booklet** until you are told to do so by a proctor.
- 3. Print your **Name** and **Student Identification Number** on **every** page in the space provided at the top of each page **before** you start the exam.
- 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. Please read the **entire** exam before answering any of the questions.
- 6. There are **four** questions on this exam, each worth the indicated number of marks. **Answer as many questions as you can.**
- 7. Write **all** of your answers on these pages. If you need more space, there is blank space at the end of the exam. Be sure to indicate when a question is continued, **both** on the page for that question and on the continuation page.
- 8. Interpret the exam questions as written. **No questions** will be answered by the proctor(s) during the exam period.
- 9. The exam is **closed book**. There are **no aids permitted**, except for a calculator.
- 10. You have **70 minutes** in which to work. **Budget your time wisely.**
- 11. In the event of a **fire alarm** during the exam, enter the four-character code provided by the proctor(s) in the space on the upper right, then gather your belongings and exit the room, handing your exam to a proctor as you exit.
- 12. No one will be permitted to leave the exam room during the **last ten minutes** of the exam.

Question	Mark	Maximum
1(a)		9
1(b)		15
2		24
32		2
4(a)		12
4(b)		18
Total		100

Question #1 [24 marks total]

This question tests your knowledge of how human activity is described hierarchically.

(a) **[9 marks]** Define each of the terms **process**, **step**, and **task** and indicate the hierarchical relationships and the principal differences amongst them.

(b) [15 marks] Provide a hierarchic description for the task of getting \$40 in Fast Cash from an ATM using a diagrammatic notation similar to what appears in the textbook. Your diagram should have at least two levels in it, with some of the higher-level pieces usable in a hierarchic description of other ATM usage such as making a deposit or transferring funds.

Question #2 [24 marks total]

This questions tests your knowledge of **usability factors**.

In Chapter 1, and again in Chapter 4, the text lists eight (8) **usability factors** that are important for interactive systems. Name each of them and give a brief explanation.

Question #3 [22 marks total]

This questions tests your knowledge of the importance of a clear problem statement.

(a) [12 marks] List the four components of the one-sentence problem statement.

(b) [5 marks] What is the difference between a problem statement and a situation of concern?

(c) **[5 marks]** Of what importance is the **causal link** between the **course of action** and the **situation of concern**?

Question #4 [30 marks total]

This question tests your knowledge of the Human Virtual Machine and some of the theories and characteristics of human behaviour and performance that are relevant to Interactive System Design.

(a) **[12 marks]** List the three types of theories that are discussed in the text and give a brief definition for each, indicating the benefits and limitations. Give an example of each type.

(b) **[18 marks]** For each of the following terms provide a brief explanation. Include in your answer any mathematical formulation related to the term, and indicate whether the term is related to perception/cognition, motor performance, or social behaviour.

Fitts law

Hawthorne effect

Hicks law

Student ID Number: _____

Keystroke level model

Magic number seven-plus-or-minus-two

Stroop effect

(extra space to continue work)

(extra space to continue work)