

UNIVERSITY OF LONDON  
FOR EXTERNAL STUDENTS (West)  
B. Sc. Examination 2005

CIS 315 HUMAN-COMPUTER INTERACTION

Duration: 2 hours and 15 minutes

Date and time:

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*Do not attempt more than THREE questions. All questions carry equal marks and full marks can be obtained for complete answers to THREE questions.*

*Electronic calculators may be used. The make and model should be specified on the script. The calculator must not be programmed prior to the examination. Calculators which display graphics, text or algebraic equations are not allowed.*

**THIS EXAMINATION PAPER MUST NOT BE  
REMOVED FROM THE EXAMINATION ROOM.**

## Question 1

### *Psychology*

a. Outline the characteristics of **both**:

- (i) human short term memory *5 marks*
- (ii) human long term memory *5 marks*

Use diagrams to specifically illustrate your answer - but do not simply reproduce the 'Model Human Processor' diagram.

b. What is meant by the **each** of the terms below:

- i) chunking *1 marks*
- (ii) closure *1 marks*
- (iii) interference *1 marks*

Discuss how these features of human memory have been used in the design of screen-based interfaces. *2 marks*

c. Fully describe **two** different models of long-term memory. Use diagrams to support your answers where possible. *10 marks*

## Question 2

### *Design support*

a. Describe the role of **each** of the following in the context of user-centred design. Identify, **for each**, the type of information provided **and** any disadvantages of the technique.

- (i) co-operative design *4 marks*
- (ii) cognitive task analysis *4 marks*
- (iii) usability metrics *4 marks*
- (iv) sketching and design prototypes *4 marks*

b. Explain how you would use **one** of the four techniques listed above in the early design stages of developing a contacts database. *9 marks*

### Question 3

#### *Evaluation*

- a. Draw up a table listing the advantages **and** the disadvantages of **each** of the following evaluation methods:
- |       |                       |           |
|-------|-----------------------|-----------|
| (i)   | video recording       | 3.5 marks |
| (ii)  | open-ended interviews | 3.5 marks |
| (iii) | questionnaires        | 3.5 marks |
- b. Describe how and when you would use **each** of these **three** techniques in the evaluation of a computer supported conferencing system. 12 marks
- c. Which **one** of these techniques do you think would be most suitable for such an evaluation? Justify your answer. 2.5 marks

### Question 4

#### *Design and Modelling*

- a. What is the difference between the term '*user interface*' and '*human-computer interaction*'? 2 marks
- b. Fully describe, with appropriate diagrams, (i) '*the user's model*' **and** (ii) '*the designer's model*' of an interactive computer system. 6 marks
- Distinguish clearly between the two illustrating your answer with suitable examples from a number of different computer applications. 6 marks
- c. Describe as a **brief case study** some of the '*participatory design*' methods which allow users to be actively involved in the development and evaluation of interactive systems. 11 marks

## Question 5

### *Design support, evaluation & prototyping*

- a. What is meant by **each** of the terms below:
- (i) UIMS (User Interface Management System) *2 marks*
  - (ii) UI (User Interface) Toolkit *2 marks*
  - (iii) Rapid prototyping *2 marks*
  - (iv) Horizontal prototype *2 marks*
  - (v) Vertical prototype *2 marks*
- b. Describe the following techniques which can be used for prototyping and user-interface design evaluation. Give examples of **each** .
- (i) storyboards and design scenarios *2.5 marks*
  - (ii) Wizard of Oz simulations *2.5 marks*
  - (iii) throw-away prototypes *2.5 marks*
- c. When, and in which situations, might **each** technique be used? *7.5 marks*

**END OF EXAMINATION**