ANSWER 3 QUESTIONS

1. Evaluation methods

HCI evaluation methods have been distinguished in terms of four classes: analytic evaluation; specialist reports; user reports; and observational evaluation.

(a) Briefly describe ANY TWO of the different classes of method and discuss the advantages and disadvantages associated with a method from each class.

[16 marks]

(b) Discuss the suitability of different classes of method for evaluating a computer-based drawing package at ANY TWO of the following stages of development:

(i) requirements specification;

(ii) design;

(iii) post-implementation testing;

(iv) re-design of the product when on the market.

[17 marks]

[Total 33 Marks]

2. ***Physical context for human-computer interaction***

Computers are operated in a variety of physical contexts (e.g. outdoors; in vehicles; in offices; in factories).

(a) Why is it important to consider the physical context in which a computer is operated when designing its user interface and configuring the machine for users in their workspace? Illustrate your answer by describing the possible adverse consequences of NOT giving due regard to TWO aspects of the physical context of a system.

[13 marks]

(b) Describe and contrast the main contextual factors that would influence the design and configuration of the user interface and workspace for ANY TWO of the following:

(i) an office system requiring large-scale data entry
(ii) a hand-held computerised navigation aid for walkers and climbers
(iii) a computerised navigation aid for a car
(iv) a workstation for use by computer science students in a university

[20 marks]

[Total 33 Marks]

3. Dialogue Styles

(a) You have been asked to design a form for collecting student feedback on individual taught courses through the World-Wide Web. Consider what design options are available for form-filling, and state how you would apply them in this particular case.

[18 marks]

(b) Many design guidelines recommend that designers make use of icons in user interfaces wherever possible, because users recognise pictures more readily than words. An examination of the properties of picture- and language-like representations reveals that this statement needs to be qualified. Write a short statement, which could be included in a design guideline, explaining more accurately why and when icons should be employed.

[15 marks]

[Total 33 Marks]

4. Conceptual Design

Norman (1986) proposed a conceptual design approach for user interfaces to facilitate users' interaction with the system.

(a) Describe the conceptual design approach and explain how it could be applied to the design of user interfaces.

[8 marks]

(b) Design practitioners, such as Tognazzini (1991), have reported that their attempts to apply conceptual design encountered problems. Identify obstacles designers may encounter when trying to apply conceptual design in general, and to off-the-shelf software packages in particular.

[15 marks]

(c) Discuss the properties of users' models and how they may undermine the goals of conceptual design.

[10 marks]

[Total 33 Marks]

5. ***User-centred and participatory design***

(a) Explain the difference between user-centred and participatory design approaches, in terms of

(i) motivation and background

(ii) tools and methods employed

(iii) control of the design process.

[9 marks]

(b) Consider the relationship between user-centred and participatory design approaches and task analysis. Outline how task analysis would be used in projects following a user-centred and a participatory approach.

[10 marks]

(c) Winograd (1990) argued that most computer-scientists and software engineers are, in the course of their professional education and training, not adequately prepared for participatory design projects.

(i) Summarise Winograd's arguments.

(ii) Suggest measures a software development organisation could take to overcome this problem and increase user participation in their projects.

[14 marks]

[Total 33 Marks]

[END OF PAPER]