

THE BCS PROFESSIONAL EXAMINATION

The Professional Graduate Diploma

April 2000

EXAMINERS' REPORT

User interface design

This three-hour paper required candidates to attempt three questions from a choice of five. This should have indicated to candidates the need to fully develop their answers to the questions, given one hour to answer each question. In general, candidates did provide full answers and discussion, illustrating their answers in the manner that would be expected at this level.

Question 1

Answer Pointers

How would a user interface for selling music CDs over the web differ from an application to monitor and control a Nuclear Power Plant? (25 marks)

In connection with the nuclear plant, the following points could have been made:

- safety-critical application (clarity of information is important and a big issue in the design of the interface);
- complexity of plant process (many sources of information are required for the safe and efficient running of the plant);
- the information must be presented to the user in a uniform manner;
- help systems will need to be extensive;
- part of the system will be duplicated in case of failure of a subsystem;
- the user would be an expert and familiar with the system;
- monitoring tends to be a passive task.

In connection with the CD selling, the following points should have been considered:

- the web site should offer search facilities, classification of music in terms of type;
- may allow a user to listen to a track of the CD prior to purchase;
- shopping basket and calculator;
- the user is likely to be a novice;
- security of credit card purchase;
- purchase is an active task.

Four to six points, with full discussion, expected for each interface at 2 marks each to a maximum of 20 marks. Further 5 marks awarded for quality of overall answer and comparison of the two interfaces.

Examiners' Guidance Notes

Some candidates presented answers that considered each interface separately but failed to compare and contrast the two interfaces. This ability should be expected of the more able candidates.

Question 2

Answer Pointers

Outline and discuss a principled design and evaluation strategy for the prototyping and development of an automated teller machine (ATM). (25 marks)

The design factors that should have been covered included: the users, the machine tasks, the environment, user support, interface output and communication style. The evaluation strategy should have discussed evaluation at the engineering stage, comparison of designs, experiments and benchmarks.

6 design factors x 2.5 marks each = 15 marks

4 issues for evaluation strategy x 2.5 marks each = 10 marks

TOTAL 25 MARKS

Examiners' Guidance Notes

The interface for an ATM machine was the focus of this question. The more general nature of the question stretched the candidates a little. Given the commonplace nature of an ATM it was surprising that several candidates made errors in the design of the interface.

Question 3

Answer Pointers

The format and content of information displayed on computer screens is very important in determining the success of a user's interaction with a system. Discuss the guidelines for optimising screen displays. (25 marks)

Candidates should have discussed:

- the amount of information presented;
- the grouping of information;
- the highlighting of information;
- standardisation of screen displays;
- presentation of text (e.g. use of upper and lowercase); and
- the use of graphics, icons and colour.

6 general issues x 3.5 marks each = 21 marks

4 marks for overall quality of answer - well structured, coherent, etc. **TOTAL 25 MARKS**

Examiners' Guidance Notes

This was a popular question on screen displays and most candidates made a good attempt at answering it. The examiners' only complaint would be the poor structuring of the answers - bullet points, or headed paragraphs, is more applicable when discussing a number of distinct guidelines.

Question 4

Answer Pointers

A number of computer users at your company have been complaining of RSI (Repetitive Strain Injury) and other health problems. Write a safety briefing, to be circulated to all

employees, describing measures they should take in order to reduce the hazards of using computers at work. (25 marks)

Some of the points that could have been made are:

- Wrists should not be bent to the side, but instead your fingers should be in a straight line with your forearm.
- Tilt the back edge of your keyboard down, away from you. This is a good argument for getting an adjustable keyboard tray that permits optimal positioning.
- Increase your font size. Many people favour tiny little fonts in their desktops and applications. This encourages the user to hunch forward into the monitor to read things, putting pressure on nerves and blood vessels in the neck and shoulders.
- Use a light touch on the keys.
- Use two hands to perform double-key operations like Ctrl-C.
- Take breaks to stretch and relax.
- Hold the mouse lightly, don't grip it hard or squeeze it.
- Keep your arms & hands warm. Cold muscles & tendons are at much greater risk for overuse injuries.
- Ensure that your eyes are checked regularly.

Any valid 7 points x 3 marks each = 21 marks

Framed as Safety Briefing (as per question) = 2 marks

Overall quality of answer = 2 marks

TOTAL 25 MARKS

Examiners' Guidance Notes

This question was answered reasonably well. However, most answers suffered from too much descriptive information hiding a lack of content. Candidates need to learn to be selective in the material they present and to relate it to the question.

Question Five

Answer Pointers

Digital Television has produced a proliferation of channels that can be watched by the customer. This has led providers to change the way that customers select channels – for example using menus to select programmes from entertainment, movies, sport, etc. In addition, providers are also thinking about how customers can be given access to e-mail and other services, such as remote shopping, from their television.

Describe the issues associated with providing this kind of interface to the customer and suggest improvements that could be made in the future. (25 marks)

The following issues could have been discussed:

- Classification of channels is not necessarily clear cut.
- There are a large number of different kinds of people using the system - each with their own ideas on how it should work.
- Users have to interact with services via a remote control - particularly difficult for writing e-mail messages.

Things could be improved in the future by:

- Providing the customer with a keyboard.
- Improved television quality (making it more like a computer monitor).
- Touch screen televisions (although this has other problems - like having to get out of your chair!).

Any valid 6 points x 4 marks each = 24 marks

1 mark for overall quality of answer

TOTAL 25 MARKS

Examiners' Guidance Notes

The few candidates that attempted this question presented good answers, so no generalisations can be drawn.