

THE BRITISH COMPUTER SOCIETY

THE BCS PROFESSIONAL EXAMINATION Professional Graduate Diploma

USER INTERFACE DESIGN

20th April 2005, 10.00 a.m.-1.00 p.m.

Answer THREE questions out of FIVE. All questions carry equal marks.

Time: THREE hours.

*The marks given in brackets are **indicative** of the weight given to each part of the question.*

1. Your company is developing a mobile multimedia handheld computer with wireless networking. The computer will have a colour screen of approximately 15cm x 10cm. Although details have not yet been finalised, the computer will run some form of Microsoft Windows® operating system.

Provide a set of general guidelines for how the user interface and user interaction should be designed. The guidelines should address both software and hardware issues, e.g. use of stylus and buttons to aid interaction. You may use diagrams to illustrate your proposed guidelines. **(25 marks)**

2. It is well documented that the characteristics of human memory place limitations on human-computer interaction and must be taken into account when designing user interfaces.

- a) What are the main memory limitations and problems experienced by users when interacting with computers?
- b) Provide recommendations for how you can take account of human memory limitations when designing user interfaces. **(25 marks)**

3. In modern times, user interfaces are designed and implemented with User Centred Approaches - often referred to as Usability Engineering.

- a) What are the main characteristics of Usability Engineering and what are the main phases of development and implementation?
- b) What are the main advantages and disadvantages of Usability Engineering? **(25 marks)**

4. You work as an independent web design consultant and a large commercial company has approached you for help. The company hosts a number of websites and have received negative feedback from both staff and customers. The company asks you to address the following:

- a) How would you go about setting usability criteria for a website?
- b) Evaluations of websites frequently focus on the look and feel of web pages rather than structure. How can you design an evaluation study that focuses on the structure and organisation of a website?
(Note: structure and organisation in this context refer to how web pages and other elements, e.g. graphics, are linked together to form logical meaningful navigation.) **(25 marks)**

Turn over]

5. You are a member of a software development team designing the graphical user interface to a software package that will be used in schools to teach interactive system design. The user interface will employ a mixture of text and graphics but a special emphasis will be placed on the use of high quality icons.

Write a set of guidelines and recommendations for the team on how to design the icons for the graphical user interface. **(25 marks)**