

UNIVERSITY OF EDINBURGH

COLLEGE OF SCIENCE AND ENGINEERING

Computer Literacy 1h

Resit Examination

Date: 9th September 2003

Time: 09:30 – 11:00

Place: Playfair Library Hall

Board of Examiners

Chair: M.R. Jerrum

External Examiner: R. Dyckhoff

Instructions to Candidates

Attempt **ALL** questions in part 'A' and **ONE** question from part 'B'

Marks for questions are indicated in brackets after each question and the total for the exam is 70.

Candidates in the third or later year of study for the degrees of MA(General), BA(Relig Stud), BD, BCom, BSc(Social Science), BSc(Science) and BEng should put a tick (✓) in the box on the front cover of the script book.

Part "A"

Answer ALL questions from this section

1. (a) List four functions of an *operating system*. [2 marks]
 - (b) If a page of text can be stored in a kilobyte, approximately how many pages of text can be stored on a CD-ROM? [2 marks]
 - (c) Identify four of the features you would expect of a good computer application. [2 marks]
 - (d) Explain where you would need *lossless* data compression and why in some instances *lossy* data compression would be more appropriate. [2 marks]
 - (e) One function of a DBMS is to maintain data integrity. What problems would you expect when using a database that did not show this property? [2 marks]
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2. (a) Describe the nature and function of a *mainframe* computer. [2 marks]
 - (b) A word processing application is a powerful tool for any author. Describe some of the benefits and problems of using a word processor when writing creatively. [4 marks]
 - (c) Write down a list of guidelines you would make sure an 11-year-old girl knew before allowing her to use an Internet chat-room unattended. [4 marks]
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3. (a) Describe some of the uses and possibilities of computer graphics in the visualisation of data in 3-D. [4 marks]
 - (b) Describe some of the ways in which e-business technologies can link together different aspects of a complex business such as an airline. [4 marks]
 - (c) Describe two ways in which data can be input into a computer other than a keyboard and say why this is an important issue given future trends in computers. [2 marks]

4. (a) What is *identity theft*? [2 marks]
- (b) Computer crimes leave trails of 'electronic footprints'. Explain. [2 marks]
- (c) What is an *intranet*? [2 marks]
- (d) What is meant by *ubiquitous broadband*? [2 marks]
- (e) Give four examples of everyday applications of computer and communication technology which if taken together could present a detailed trace of our daily activities. [2 marks]
5. (a) "Computer network" and "phone network", "fibre-optic" and "twisted-pair" are used to describe different services and network technologies. Explain these distinctions and why they are no longer entirely valid. [6 marks]
- (b) Briefly describe three different forms of wireless network used for computer-based communication. [3 marks]
- (c) What is a *modem*? [1 mark]

Part "B"

Answer ONE question only from this section

- B1.** The IT Society is a double-edged sword. Discuss how the law, the markets, the nature of computers and networks and norms of behaviour combine to create opportunities and threats to our way of life and how these are kept in balance. [20 marks]
- B2.** What is computer literacy? Describe the insights a computer-literate person could apply if asked to comment on computer-related problems and situations in personal or business life. [20 marks]
- B3.** Browsing news media might lead the reader to believe that advances in communications have only brought society more pornography, paedophilia and opportunities for criminal activities via spam. Present a case that this is not true and argue for the benefits. You may wish to draw on your own experience and what you have read in the press. [20 marks]
- B4.** As mobile phones, PDAs and laptop computers continue to converge, they can provide 'mobile offices' to suit every budget. Outline the advances that have made this possible, some likely future developments and some of the benefits and pitfalls of the large-scale adoption of this technology in society. [20 marks]