UNIVERSITY OF EDINBURGH


COLLEGE OF SCIENCE AND ENGINEERING


# Computer Literacy 1h


Resit Examination


**Date:** 16 August 2004
**Time:** 2:30 – 4:00 p.m. (one and a half hours)
**Place:** Room 101 Building 1, Edinburgh College of Art


**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. Each question in part 'A' is worth
ELEVEN marks and the total for the exam is 75.


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)** What is Moore's Law? Give an example of something that does generally follow Moore's law and something that does *not*. [2 marks]

**(b)** Alex sends Rachel an image as a binary e-mail attachment. What does Alex's email program have to do to ensure that Rachel receives it correctly? [2 marks]

**(c)** What is a RAID array? [2 marks]
Give one reason why you might want to use one. [1 mark]

**(d)** Give one advantage of Linux over Windows and one advantage of Windows over Linux. [2 marks]

**(e)** In what ways is a desktop video conference likely to be a more limited experience than a face-to-face meeting? [2 marks]

**2. (a)** What factors influence the cost and effort of creating and maintaining a popular web page? Give one example of how a web page can be written so as to reduce maintenance costs. [4 marks]

**(b)** What procedures and techniques go into the production of software that has to be exceptionally reliable? [4 marks]

**(c)** Why would you not expect the performance of a PC with a 3.2 GHz processor to be twice that of one with a 1.6 GHz processor? [3 marks]

**3. (a)** Explain the role of the Java programming language in efficient client-server operation. [4 marks]

**(b)** Give two examples of *business processes* that have been transformed by the application of IT, and in each case describe the effects this will have had. [4 marks]

**(c)** Describe three of the key steps in producing a computer representation of a real-world scene. [3 marks]

**4. (a)** List three key features of a mesh network. [3 marks]

**(b)** What is a cable modem? [2 marks]

**(c)** Outline the functions of a firewall. [2 marks]

**(d)** Describe the key features of IP. [2 marks]

**(e)** Briefly describe two physical media used to provide links between computers. [2 marks]

**5. (a)** What is a logic bomb? [2 marks]

**(b)** What is meant by ubiquitous broadband? [2 marks]

**(c)** Distinguish between 1G, 2G, 2.5G and 3G by listing one characteristic of each. [2 marks]

**(d)** Explain why carelessness can be extremely costly in the age of web-based communication in ways never experienced in conventional communication. [2 marks]

**(e)** Explain the possible benefits and dangers of widespread use of RFID technology. [3 marks]

**Part "B"**

**Answer ONE question only from this section**

**B1.** Discuss some of the ways in which IT materially affects our daily lives for the better and the issues we all have to be aware of to prevent its abuse and maintain our safety, privacy and freedom. [20 marks]

**B2.** A friend has just graduated from the Art College and would like to set up a business selling personalised greetings – both conventional cards and greetings sent electronically as mail attachments. She has conventional art skills but is aware that there could be major benefits in promoting herself over the Internet and using IT generally to support her business. She asks you to help her set herself up. In what ways could IT and the Internet benefit her business and what advice would you give to help her get started? What potential problems should she be aware of? [20 marks]

**B3.** Briefly describe what you understand by each of the following and explain how they are related:
- The ARPANet
- The Internet
- An intranet
- The World Wide Web
- Bluetooth. [20 marks]

**B4.** 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]