UNIVERSITY OF EDINBURGH

FACULTY OF SCIENCE AND ENGINEERING

DIVISION OF INFORMATICS

SCHOOL OF COMPUTER SCIENCE

Computer Literacy 1h

Class Examination

Date: Saturday, 26 January 2002
Time: 09:30 – 11:00
Place: Adam House
Room: 1st floor

Board of Examiners
Chair: Stuart Anderson

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.

Part "A"

Answer ALL questions from this section

1. **(a)** Describe two of the differences between the GIF and JPG (JPEG) image formats. [2 marks]

(b) What is MIME-encoding used for? [2 marks]

(c) What is a path? Give an example from the World Wide Web. [2 marks]

(d) What are the key features of a Geographical Information System (GIS) ? [2 marks]

(e) The year 1998 can be written as **7CE** in hexadecimal. What is the hexadecimal representation of the years 1999, 2000, 2001 and 2002? [2 marks]

2. **(a)** Two or more people communicating electronically do not behave the same way they would if speaking face to face. Why? Describe one negative result of this and how people try to avoid the problem. [5 marks]

(b) Describe two important benefits of being able to visualise data in 3D. [2 marks]

(c) Describe three functions of an operating system. [3 marks]

3. **(a)** The *Cost of Ownership* of a computer is the total cost in time and money to the owner over the computer's lifetime. What costs would this include? [4 marks]

(b) Briefly describe four of the stages in the historical development of current Information Technology. [4 marks]

(c) Explain what you understand by the terms client and server, giving an example. [2 marks]

4. **(a)** Give two practical problems that must be solved in order to establish reliable communications between computers. [2 marks]

(b) Give examples of two physical media used for linking computers together. [2 marks]

(c) Describe the separate functions of TCP and IP in TCP/IP. [2 marks]

(d) What is the function of a modem? [2 marks]

(e) Give an example of computer crime that exists because of advances in communications. [2 marks]

5. **(a)** Explain the parts played by *algorithms*, *pseudo-code* and *program* in developing a computer-based solution to a problem. [6 marks]

(b) You have a spreadsheet containing exam marks sorted by candidate name. You instruct the spreadsheet to sort the list ordered by exam mark. Assuming that a sorting algorithm that you know is being used, explain the steps involved. [4 marks]

Part "B"

Answer ONE question only from this section

B1. A friend is setting up a business selling florists' and craft supplies. She is aware that proper use of Information Technology (I.T.) could reduce costs and increase opportunities in her business. She asks you for advice. What would you say and do?

[20 marks]

B2. There are many ways in which a computer-based project or solution can go wrong and fail to produce the benefits the designers intended. Describe some of the factors that lead to problems when people apply IT to a problem in the workplace and how these can be avoided.

[20 marks]

B3 Describe the principal components of a major corporate network and the functions they perform to link machines and smaller networks together reliably and securely within the corporation and to provide access to the Internet.

[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]