

UNIVERSITY OF EDINBURGH

FACULTY OF SCIENCE AND ENGINEERING

Computer Literacy 1h

Resit Examination

Date: 6 September 2002

Time: 2:00 p.m.

Board of Examiners

Chair: D. K. Arvind

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) Give four examples that outline the historical evolution of the user interface to computer systems. [2 marks]
 - (b) Name one part of a computer-based service that does not obey Moore's law and a consequence of this. [2 marks]
 - (c) Using reasonable size estimates, show approximately how many 3-minute sound tracks encoded as MP3 will fit on a CD-ROM. [2 marks]
 - (d) What is the main application of a Linear Programming package? [2 marks]
 - (e) What is the principal weakness of single-key encryption systems? [2 marks]
2. (a) Cascading Style Sheets (CSS) are a mechanism for specifying the style of headings, page layouts, etc. Explain why you would use Cascading Style Sheets rather than just writing plain HTML. [4 marks]
 - (b) The spreadsheet fragment below shows part of an expenses claim for a contract, itemized and totalled in Pounds (£) and Euros (€). Rows 8 to 12 have been hidden but contain entries for Visit 3 to Visit 7 inclusive.

	A	B	C	D	E	F
1		Conversion: £/€:		1.5		
2						
3	Item	Consultant costs (£)			Consultant costs (€)	
4						
5		Fees	Expenses		Fees	Expenses
6	Visit 1	300	600		450	
7	Visit 2	1000	800			
13	Visit 8	200	100			
14	Total					

- i. Write down formulae for the missing totals in B14 and C14. [2 marks]
- ii. Cell E6 contains a formula for converting cell B6 into Euros. Explain what you would do to generate the values in E6:E13 and F6:F13 using the mouse only (i.e. without any further typing). Write down a suitable formula for cell E6. [4 marks]

3. (a) Describe some of the functions you would expect to find in a database query language. [4 marks]
- (b) List two qualities you would expect of “good” management information. [2 marks]
- (c) List four of the key functions of an operating system. Choose **one** and explain how it contributes to the performance or smooth running of a computer [4 marks]
4. (a) List three possible types of error in computer communication. [3 marks]
- (b) Briefly describe three physical media used to provide links between computers. [3 marks]
- (c) Write a note summarising the key features of **one** of
- i. TCP/IP
 - ii. Ethernet
- [4 marks]
5. (a) Outline the function of a *firewall* in a computer network. [2 marks]
- (b) Briefly describe an *ethical* issue that has arisen with the spread of computer communication. [2 marks]
- (c) Briefly describe a *legal* issue that has arisen with the spread of computer communication. [2 marks]
- (d) i. Describe what happens in an *Insertion Sort* [2 marks]
- ii. Illustrate Insertion Sort on the following set of numbers:
- 17 9 13 5 18 15
- Show the set after each step, with the final sorted set having the smallest value on the left and the largest on the right. [2 marks]

Part "B"

Answer ONE question only from this section

- B1.** Describe some of the ways in which e-business is now changing the way firms operate and comment on the likely benefits and possible problems. [20 marks]
- B2.** Many computer-related projects go catastrophically wrong or go way over budget. Describe some of the principles you would apply when asked to contribute to an IT-based project and the kind of problems that might be expected if you failed to do so. [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.** Predicting technological change is notoriously difficult, especially in communications. Outline what you know of capabilities provided by static and mobile computing/communicating devices now available. Describe what you see as likely developments in technology and services in the next few years. [20 marks]