

UNIVERSITY OF EDINBURGH

COLLEGE OF SCIENCE AND ENGINEERING

Computer Literacy 1h

Degree Examination

Date: 30 May 2003

Time: 2:00 p.m. – 3:30 p.m.

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) Name two ways in which I.T. will be developing and changing over the next few years. [2 marks]
 - (b) Describe two mechanisms which enable accented or special characters to be included in e-mail or web pages. [2 marks]
 - (c) Name four items that contribute to the *cost of ownership* of a computer. [2 marks]
 - (d) Name two types of information you might expect to find on the web and elsewhere that provide support for an application after you have purchased it. [2 marks]
 - (e) I have data on CD-ROM that I may still need to use in 20 years time. What will I have to do between now and then to ensure that I can still access this data in 2023? [2 marks]
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2. (a) Draw a diagram showing the major hardware 'building blocks' of a computer and describe the function of each. [5 marks]
 - (b) Describe some of the ways in which the Internet can be used to commit crimes against its users and some of the elementary precautions that users should take to prevent this happening. [5 marks]

3. (a) Describe some of the possibilities and limitations in using *groupware* (bulletin boards, chatrooms, shared documents, desktop videoconferencing etc.) [5 marks]
- (b) Good content is wasted if a web page is unattractive or difficult or frustrating to use. Describe some of the principles of good web page design. [4 marks]
- (c) Name one way in which a web site can be made easy to *maintain*. [1 mark]
4. (a) List four tasks a communications protocol has to perform to enable the exchange of information between two computers. [2 marks]
- (b) How has old telephone cable continued to play a part in the age of high speed digital communication? [2 marks]
- (c) List three key features of a *mesh* network. [3 marks]
- (d) Describe the operation of Bidirectional Bubblesort when used to sort a jumbled list of names into dictionary order. You may answer using a worked example. [3 marks]
5. (a) What is a cable modem? [2 marks]
- (b) What is a logic bomb? [2 marks]
- (c) Explain what is meant by an insecure communications channel. How can encryption be used to provide security? [2 marks]
- (d) What is WiFi and how can it be used? [2 marks]
- (e) Describe how a home computer can be connected to the Internet. How is this likely to differ from the way a computer in a university microlab is connected to the Internet? [2 marks]

Part "B"

Answer ONE question only from this section

- B1.** Discuss the ways in which information technology has contributed to the development of commerce and business and some of the barriers to the adoption of “e-commerce” that need to be overcome. [20 marks]
- B2.** Any large organisation will have an I.T. department or computing service that covers all aspects of I.T. from long-term planning through service and system management to user support. Using what you have learned in the course and any relevant personal experience, describe what will be the principal functions of the Computing Service in the University of Edinburgh and the likely job descriptions and content of a representative selection of the people working for it. [20 marks]
- B3.** Describe the major changes in computing and communications technology that have taken place that allow terms such as computer confluence and digital convergence to be useful and meaningful. Give examples from your own personal experience and what you have read. [20 marks]
- B4.** IT stands for Information Technology. Explain how Invasive Technology could be another meaning. What is being invaded or threatened? Does it matter? Can it be prevented? [20 marks]