

BCS The Chartered Institute for IT

BCS HIGHER EDUCATION QUALIFICATIONS
BCS Level 5 Diploma in IT

PROFESSIONAL ISSUES IN INFORMATION SYSTEMS PRACTICE

Thursday 30th September 2010 - Morning
Answer FOUR questions out of SIX. All questions carry equal marks
Time: TWO hours

*The marks given in brackets are **indicative** of the weight given to each part of the question.*

Calculators are NOT allowed in this examination.

1. a) The BCS Code of Conduct (2004) has four sections:

- i) the public interest;
- ii) duty to the relevant authority;
- iii) duty to the profession;
- iv) professional competence and integrity.

Summarise the purpose of, and the issues addressed by, each section.
(Do not try to write out the code in full.)

(16 marks)

- b) It can happen that an employee finds that his or her employer is behaving in an illegal fashion and wishes to draw the attention of regulatory bodies or other authorities to this behaviour

When is it appropriate for the employee to breach the confidentiality provisions of his or her contract of employment? What guidance can you draw from the BCS Code of Conduct, employment law, the Public Interest Disclosure Act or other appropriate legal and ethical sources?

(9 marks)

2. a) Briefly explain the terms recruitment and selection and distinguish between them.

(5 marks)

- b) The documentation usually required when recruiting a new employee has three components:

- i) a job description, that is, a description of the tasks that the person appointed will be expected to carry out;
- ii) a person specification, that is, a description of the qualifications, experience and other characteristics that will be looked for in the person appointed;
- iii) the contractual terms and conditions that will apply to the appointment.

Give an example of each component for the recruitment of a systems analyst, or similar professional, in an organisation of your choice.

(20 marks)

(Turn over)

3. A new start-up organisation, M-Web, has been established by two software professionals. They are developing a mobile phone application for searching the web informed by the current location of the user.

- a) Discuss whether the organisation should be formed as a partnership or a limited company.

(13 marks)

- b) The application will be given away free but businesses will be charged for advertising their products or services as a preferred site. The company is developing a business plan based on two options.

The first option has the application working on only a limited range of mobile phones; the development cost and the investment in marketing would be lower than for the second option, but so would be the number of users.

The second option is to develop an enhanced application that will work on a wide range of mobile phones. The development cost would be higher and so would the marketing cost but there would be more users than for option 1.

The initial cost of developing the software for option 1 will be £85,000, with a maintenance cost estimated at £5,000 per year. For option 2, the development cost will be £120,000, with maintenance at £10,000 per year. The marketing costs are approximately £2 per user per year.

Income is estimated to be £4 per user per year.

Develop a simple cash flow projection for four years using the following data and, ignoring the time value of money, calculate the payback period for each option assessing which would be better.

Year	Option 1 Number of users with low level of marketing	Option 2 Number of users with high level of marketing
1	5,000	20,000
2	15,000	50,000
3	30,000	80,000
4	50,000	100,000

(12 marks)

4. a) Explain the difference between copyright and trademarks as they affect the protection of software.

(12 marks)

- b) Describe the protection that the UK Data Protection Act 1998 offers to data subjects.

(13 marks)

5. a) Borth Data Services (BDS) is a multinational organisation that specialises in the provision of outsourced IT services; it is a highly centralised organisation. Cambrian Software Limited (CSL) is a multinational organisation that specialises in the development of large and complex software systems; it is a highly decentralised organisation.

Describe TWO practical effects that a project manager or senior systems architect would notice on moving from one company to the other.

(13 marks)

- b) Many global organisations have tried introducing a matrix structure to balance the power of their functional and divisional groups. This has often created problems and led them instead to implement a hybrid form of divisionalised structure.

Identify THREE problems that these organisations may have experienced with their matrix structures.

(12 marks)

6. a) Explain the criminal offences that might apply to creating and distributing malware, such as computer viruses, worms, Trojan horse software and spyware.

(12 marks)

- b) A UK police force is investigating a case of suspected fraud by a criminal gang. It has identified the Internet service provider used by one of the gang members. Outline the responsibilities of the Internet service provider under the UK Regulation of Investigatory Powers Act 2000 with regard to the police investigation.

(13 marks)