

**BCS THE CHARTERED INSTITUTE FOR IT**  
**BCS Higher Education Qualifications**  
**BCS Level 5 Diploma in IT**

**September 2015 Sitting**

**EXAMINERS' REPORT**

**Professional Issues in Information Systems Practice**

**General comments on candidates' performance**

The pass rate this sitting was comparatively good and the marked variations from one centre to another have largely disappeared. However, some 20% of candidates gained a mark of less than 25%; such candidates are clearly not properly prepared for the examination and are wasting their time and money by taking it.

The number of candidates who register but then fail to present themselves for the examination continues its welcome decline.

The examiners can only reiterate what has been said in previous reports. Candidates who fail this module do so for one or more of the following three reasons:

- lack of knowledge as a result of inadequate preparation; *or*
- poor skills in written English with the result that they cannot express their knowledge; *or*
- lack of the intellectual abilities required to understand the material or to apply it to concrete scenarios.

The failure of candidates to apply their knowledge to specific scenarios is a serious problem and we would strongly urge those teaching candidates for this module to devote a significant amount of classroom time to discussion of scenarios. There is little point in candidates studying the material in this module unless they can relate it to situations that they are likely to meet in their professional lives.

There was a sharp contrast in the quality of the answers to questions 1, 2 and 4, which were reasonably well answered, with over two thirds of those who attempted them gaining a pass mark on the question, and questions 3, 5 and 6, which were very badly answered, with few candidates achieving a pass mark.

Questions 3 and 6 were attempted by comparatively few candidates; this, along with the appallingly low pass rate (around 12%) suggests that candidates or their instructors were deliberately ignoring the topics addressed in these questions, notwithstanding the fact that the topics are explicitly mentioned in the syllabus and explicitly covered in the recommended text book.

Question 5, on intellectual property rights, was attempted by around 90% of candidates but only about a third of them gained a pass mark. Most candidates seemed aware of the terminology and, up to a point, knew what it meant. They were aware of its importance. They seemed however unable to relate any of this to the IT industry. Clearly, they had been taught the material but not in such a way as to make them understand its importance in IT practice.

## Question A1

- a) Briefly explain the difference between the purpose of a Code of Conduct and a Code of Practice. **(5 marks)**
- b) The BCS **Code of Conduct** is divided into four sections; list these sections individually and give a brief explanation of the purpose of each.

**(4x5 marks)**

### Answer pointers

#### Part (a)

A Code of Conduct sets out the professional standards of behaviour that members of the body are expected to follow in their professional life. It applies to all members. "It looks outwards, in the sense that it is concerned with the relationship between members and society as a whole". It governs the conduct of the individual.

A Code of Practice is concerned with the way in which the professional activities should be carried out.

#### Part (b)

##### The Public Interest

This section requires members to be aware of and comply with aspects of the law and regulations that govern acting in the public interest. For example, members need to safeguard public health, protect the environment, have due regard for privacy and human rights and avoid discrimination.

The section is also concerned with the rights of third parties as well as copyright and intellectual property and it invites members to take any opportunity to address the so-called digital divide, that is, the inequality that exists, for whatever reason, among different groups with respect to their ability to benefit from information and communication technologies.

##### Professional competence and integrity

This section addresses what has been, and to some extent continues to be, a serious problem for the IT industry. Only too often, individuals and companies claim to be able to undertake work that they are not competent to carry out, and this leads to system failures.

Under this section members are also required to keep their professional skills up to date and be familiar with the legislation that is relevant to their professional activities.

##### Duty to the relevant authority

The term 'relevant authority' means the person or organisation that has authority over what the member is doing, typically employer or client.

Members should carry out their professional duties with 'due care and diligence', that is, with the proper care and attention. In particular, they should avoid: conflicts of interest, disclosing confidential information without permission, and misrepresentation.

##### Duty to the profession

Like other professionals, information systems professionals have not always had a good press. System developments have been plagued by delays, budget overruns and complete failures, and these have been well publicised. Too often, the systems themselves do not meet the needs of their users. And information systems professionals have, on occasions, been perceived as behaving in an unprofessional

manner. The purpose of this section of the Code is to impress on members what is expected of them in order to uphold the reputation and good standing of BCS in particular, and the profession in general.

### **Syllabus sections: Professional Institutions and Professional Codes of Conduct**

#### **Examiners' comments**

Of the 397 students who attempted this question, 71.03% received a pass mark. This was a pleasing result and significantly better than was achieved on similar questions in the past.

Candidates who failed to gain a pass mark on the question showed the same weaknesses as in the past:

- answers were not structured as the question asked so that candidates wrote a selection of paragraphs with no clear separation of the sections;
- some candidates included irrelevant material, presumably in the mistaken belief that they would gain extra credit from doing so;
- some candidates appeared not have read the question correctly and so failed to answer parts of it.

## **Question A2**

The Data Protection Act 1998 lays down eight data protection principles. The first of these says, in essence, that personal data shall only be processed fairly and lawfully and subject to the data subject's consent.

- a) Briefly state the other seven principles. [You do not need to number them.](7x2 marks)
- b) In each of the following situations, one or more of the data protection principles is probably being violated. In each case, state which data protection principle is in danger of being violated and briefly explain why.
- i) In order to get a ticket allowing you to use the public library, a city council asks for various information including whether you are married or not.(3 marks)
  - ii) Your local hospital holds the medical records of patients in a filing system that is not password protected. (3 marks)
  - iii) Your dentists hold dental records and personal information relating to patients in a computer-based system for use in their practice. They belong to a religious sect based in Pontevedro, a country outside the European Economic Area and they send copies of their patients' personal details to the headquarters of the sect so that the sect can send evangelical material to them. (5 marks)

#### **Answer pointers**

##### **Part (a)**

Personal data shall be obtained only for one or more specified and lawful purposes, and shall not be further processed in any manner incompatible with that purpose or those purposes.

Personal data shall be adequate, relevant and not excessive in relation to the purpose or purposes for which they are processed.

Personal data shall be accurate and, where necessary, kept up to date.

Personal data processed for any purpose or purposes shall not be kept for longer than is necessary for that purpose or those purposes.

Personal data shall be processed in accordance with the rights of data subjects under this Act.

Appropriate technical and organisational measures shall be taken against unauthorised or unlawful processing of personal data and against accidental loss or destruction of, or damage to, personal data.

Personal data shall not be transferred to a country or territory outside the European Economic Area unless that country or territory ensures an adequate level of protection for the rights and freedoms of data subjects in relation to the processing of personal data.

**Part (b)**

- i) "Personal data shall be adequate, relevant and not excessive . . ." It is difficult to see how marital status is relevant to using the library.
- ii) "Appropriate technical measures . . . shall be taken against unauthorised . . . processing." Password protection in one form or another is fundamental to protecting data in a computerised filing system.
- III) "Personal data shall be obtained only for one or more specified and lawful purposes, and shall not be further processed in any manner incompatible with that purpose or those purposes." and "Personal data shall not be transferred to a country or territory outside the European Economic Area". The data were not collected for the purpose of evangelism and Pontevedro is not in the EEA.

**Syllabus section: Legal obligations**

**Examiners' comments**

Of the 282 students who attempted this question, 65.96% received a pass mark. Again, this was significantly better than the results for similar questions in the past.

The first part of the question was well answered, the main weakness being that candidates failed to separate the principles one from another. Answers to part (b) were much worse than those to part (a), with many students failing to state which of the principles was being violated in each case or giving poor explanations of how a principle was being violated.

**Question A3**

- a) Briefly describe the FIVE main characteristics of the **bureaucratic organisational model**. **(5x3 marks)**
- b) The UK Ministry of Administrative Affairs has decided to outsource its IT operations to the commercial company MegaData plc. As part of the agreement, all the Ministry's IT staff are to be transferred to MegaData. What legal rights do the staff have in this situation? **(10 marks)**

**Answer pointers**

**Part (a)**

- All tasks are split into specialised jobs and assigned to individual jobholders. Management can hold each jobholder responsible for the effective performance of their duties.

- The performance of each task is governed by rules. Therefore, no variation should exist between the way tasks are executed, hence there should be no problems with the coordination of tasks.
- Each individual (and unit) is accountable to one manager only.
- Jobholders are required to relate to fellow jobholders and customers in an impersonal and formal manner.
- Recruitment is based on qualifications, and promotion is based on seniority and achievement.

### **Syllabus section: Organisations and their Structure**

#### **Part (b)**

There are specific regulations in the UK and other countries of the European Union governing what happens to employees when an undertaking or part of an undertaking is transferred from one employer to another. These are known as the Transfer of Undertakings (Protection of Employment) (TUPE) regulations. The purpose of the regulations is to maintain the employees' conditions of employment.

Employees employed by the Ministry of Administrative Affairs become employees of MegaData on the same terms and conditions as before. It is as if their contracts of employment had originally been made with MegaData. Thus their continuity of employment is preserved, as are their terms and conditions of employment under their contracts of employment (except for certain occupational pension rights).

Representatives of employees affected have a right to be informed about the transfer. They must also be consulted about any measures which either the Ministry or MegaData envisages taking concerning affected employees.

### **Syllabus section: Human Resources Management**

#### **Examiners' comments**

This question was not popular; it was attempted by only 37% of candidates. It was very badly answered, with only 13% of the candidates who attempted it achieving a pass mark.

Many candidates answered part (a) by describing matrix structures, project management or job rotation. Few candidates showed any awareness of TUPE regulations when answering part (b).

Both topics covered in this question are explicitly included in the syllabus and are explicitly dealt with in the recommended text book.

## **Question B4**

- a) Augusta Software Ltd bought a file server for £15,000. Its depreciation policy for computer hardware is to write assets off over five years using straight line depreciation. In the event, after three years, it was decided to dispose of the file server and it was sold for £3,000.

Explain in detail what effect the disposal will have in Augusta's annual accounts. **(12 marks)**

- b) Employees of Augusta work a five day week. They are entitled to 20 days holiday a year in addition to public holidays. On average, each employee loses ten working days per year through sickness and other problems. Augusta aims to allow each employee 15 days per year for training. Experience shows that

employees spend an average of five days a year unproductively, as a result of scheduling problems. In accordance with government regulations, employers must pay social security contributions equal to 6% of salary.

If an employee earns £30,000 per year, calculate the average direct cost of one day's work from that employee. State explicitly any assumptions you make.

**(13 marks)**

### **Answer pointers**

#### **Part (a)**

The depreciation policy means an annual depreciation of  $£15000/5$ , that is £3000. After three years the book value will therefore be  $£15000 - 3 \times 3000$  i.e. £6000. The disposal will therefore result in a loss £3000. **(6 marks)**

The fixed assets in the balance sheet will be reduced by £6000. The current assets will be increased by £3000. The P&L will show expenditure of £3000. And the cash flow statement will show a cash inflow of £3000. **(6 marks)**

### **Syllabus section: Finance**

#### **Part (b)**

Assume a normal year with precisely 52 weeks. Assume 10 public holidays.

There are  $52 \times 5 = 260$  weekdays. Deduct 20 days holiday, 10 days public holiday, 10 days of sickness, 15 days of training and 5 unproductive days. This leaves 200 productive days. Annual direct cost to the employer is  $£30,000 + 6\% = £31,800$ .

Daily direct cost for each productive day is therefore  $£31,800/200 = £159$ .

### **Syllabus section: Management Accounting**

#### **Examiners' comments**

This question was attempted by 61% of the candidates, 66% of whom achieved a pass mark.

Answers to part (a) were weaker than those to part (b). In particular, few candidates mentioned the effect on the cash flow statement.

## **Question B5**

- a) Compare and contrast the protection that copyright and trademarks can provide for the developer of software designed to provide real-time control data. **(12 marks)**
- b) The application controls the operation of a machine from which the real-time data is obtained. What additional protection would a patent provide? **(6 marks)**
- c) Explain very briefly what has to be done to apply for a patent. **(7 marks)**

### **Answer pointers**

#### **Part (a)**

Copyright prevents anyone from copying the software whether for their own personal use or for commercial use. If the copying is done for commercial purposes it constitutes secondary infringement, which is a criminal offence. If it is done for

personal use, it is primary infringement and only civil action, e.g. claim for damages, is available. Copyright comes into existence automatically when the software is created. [6 marks]

Trademarks prevent other people from falsely claiming that software they are selling comes from you. It is a criminal offence to apply a trademark to a product unless you have the permission of the owner of the trademark. This includes both using the trademark on a label and displaying it on the screen when software is loaded. Trademarks have to be registered in each legal jurisdiction in which protection is required. They are not necessarily unique because an organisation will not be prevented from registering an identical trademark for a totally different kind of product. [6 marks]

### **Part (b)**

A patent would allow the developer to stop others from making, using or selling a similar system without the permission of the developer. This right lasts only for a limited time (up to 20 years) but it is absolute, that is, it does not depend on whether copying is involved. [6 marks]

The process of obtaining a patent requires the inventor to apply. A patent application will be about the ideas behind the product such as how it works, what it does and why. The application has to prove there is an inventive step – i.e. a novelty. Separate applications have to be made in every jurisdiction in which protection is required, although there is special provision within the EEA. It is usually considered necessary to employ a patent attorney. [7 marks]

## **Syllabus sections: Intellectual Property**

### **Examiners' comments**

This question was attempted by 90% of the candidates, only 32% of whom achieved a pass mark. Many of the candidates showed some knowledge of the topics but were unable to answer the question as it was set. They gave the impression of having been taught about intellectual property rights in some context other than that of software.

## **Question B6**

- a) Explain the purposes for which, under the UK Regulation of Investigatory Powers Act 2000 and the associated regulations, organisations that provide computer and telephone services can monitor and record communications without the consent of the users of the service. **(16 marks)**
- b) Explain the terms mere conduit, caching and hosting as they apply to the possible roles of internet service providers. **(9 marks)**

### **Answer pointers**

#### **Part (a)**

1. to establish facts, for example, on what date was a specific order placed;
2. to ensure that the organisation's regulations and procedures are being complied with;
3. to ascertain or demonstrate standards which are or ought be to be achieved
4. to prevent or detect crime (whether computer-related or not);

5. to investigate or detect unauthorised use of telecommunication systems;
6. to ensure the effective operation of the system, e.g., by detecting viruses or denial of service attacks;
7. to find out whether a communication is a business communication or a private one (e.g. monitoring the e-mails of employees who are on holiday, in order to deal with any that relate to the business);
8. to monitor (but not record) calls to confidential, counselling helplines run free of charge by the business, provided that users are able to remain anonymous if they so choose.

**Syllabus section: Legal obligations**

**Part (b)**

The role of mere conduit is that in which the ISP does no more than transmit data; in particular, the ISP does not initiate transmissions, does not select the receivers of the transmissions, and does not select or modify the data transmitted. It is compatible with the role of mere conduit for an ISP to store information temporarily, provided this is only done as part of the transmission process.

The caching role arises when the information is the subject of automatic, intermediate and temporary storage, for the sole purpose of increasing the efficiency of the transmission of the information to other recipients of the service upon their request.

An ISP is acting in a hosting role when it stores information provided by its customers

**Syllabus section: The Internet**

**Examiners' comments**

This question was attempted by 44% of the candidates, 11% of whom achieved a pass mark.

The topics addressed by this question are explicitly mentioned in the syllabus and are covered explicitly in the recommended text. Nevertheless, very few of the candidates who attempted the question showed any knowledge of them.