

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

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EXAMINERS' REPORT

Professional Issues in Information Systems Practice

General comments on candidates' performance

After the distressingly low pass rates evinced in recent sittings, the examiners are pleased to report a very much improved performance, with the highest pass rate for five years. It would comfort the examiners to feel that this was entirely due to the advice and guidance they provide but, realistically, they must acknowledge that the improved results are probably a consequence of a number of small factors. What was particularly gratifying was the much reduced proportion of candidates scoring less than 20% overall. Such candidates either know very little about the subject matter of the module or have such poor skills in written English that they cannot express their knowledge; in either case they should concentrate on remedying these weaknesses rather than wasting time and money taking the examination.

Question A1

- a) Describe the three main ways in which the BCS promotes education.
(9 marks)
- b) At a recent computing conference, a delegate was heard commenting that; "The future credibility of our industry will only be assured once all computing practitioners adhere to policies and standards set by their professional body, after all, practitioners in professions such as Medicine and the Law need a license to practise".
- Do you agree or disagree with this statement? Give FOUR reasons to support your answer.

(16 marks)

Answer pointers

Part (a)

The BCS runs its own system of professional examinations and grants approval to suitable organizations that provide courses to prepare students for them. [3]

The BCS accredits degree programmes offered by institutions of higher education. [3]

The BCS sets the syllabus for a range of vocational qualifications and accredits training organizations to provide the associated short courses. [3]

Part (b)

The point of this question was to encourage candidates to reflect on whether or not IS practitioners should be regulated by a professional body, as are medical and legal practitioners. The issues it raises are difficult and profound but all that candidates were expected to do was show that they were capable of thinking about the issue intelligently and in an informed way.

Candidates could have taken the view that the opinion expressed was wrong, because:

- the majority of IS practitioners do not belong to a professional body and it would be impracticable to make them do so;
- many customers who use the services of IS practitioners would be unwilling to pay the high prices that would need to be charged by practitioners who adhere to all the policies and standards set by the BCS;
- many perfectly satisfactory small IT systems are developed by practitioners for whom IS work is only a small part of their job;
- compulsory membership of a professional body and compliance with its code of conduct does not necessarily lead to public respect, witness the case of solicitors, and it may be seen simply as middle-class trade-unionism.

Alternatively they could have supported the view because:

- IT systems have so large an effect on people's lives that the public has a right to insist that the people who design and build them are experienced and properly qualified;
- professional bodies' codes of conduct and practice are an effective tool for:
 - building public confidence in a profession *and*
 - ensuring a high standard of professional skill;
- the industry can be effectively regulated only by professionals – neither the government nor the law have the necessary expertise.

Syllabus section: Professional Bodies

Examiners' comments

This question was attempted by 61% of the candidates, 54% of whom achieved a pass mark. The question was thus less popular than similar questions in the past, possibly because part (b) asked students to think critically and give their own views.

The many weak answers typically:

- addressed parts of the question only;
- did not address the actual question but wrote about what had been revised – probably demonstrating rote learning;
- were difficult to understand because of the poor quality of candidates' written English;
- were not structured in a way that related to the structure of the question, probably reflecting lack of understanding of the question (and possibly of the subject). For example, they did not clearly separate out the 'three ways' in part (a) or the 'four reasons' in part (b).

Question A2

a) Three techniques are applied in the process of job design, namely:

- job rotation.
- job enlargement.
- job enrichment.

With the help of an example, explain how each of these techniques might benefit an IT organisation.

(12 marks)

b) You have set up your own small e-commerce business and hold the personal details of all the customers who have used your website on a database. You use this data to e-mail your customers regarding forthcoming special offers. Someone manages to gain access to your website and alters the prices displayed and some of the customers' details.

Discuss how the UK Data Protection Act 1998 and the UK Computer Misuse Act 1990 relate to this scenario.

(13 marks)

Answer pointers

Part (a)

Candidates were expected to demonstrate their knowledge of each technique. To do so, they should select an example organisation (e.g. the IT department of a university) and two to three job roles (e.g. maintenance of an existing module, testing of a new module written by someone else, and development of new module).

To demonstrate how job rotation works, the candidate needs to demonstrate how each job holder carries out each of the three jobs consecutively for a period of e.g. two months each, thus rotating the three jobs between the three job holders.

(4 marks)

To demonstrate how job enlargement works, the candidate needs to demonstrate how each job holder can expand his/her role to include more jobs at the same level of skill and responsibility. E.g. The person carrying out maintenance of student records may well also carry out maintenance of the student bursary module.

(4 marks)

To demonstrate how job enrichment works, the candidate needs to demonstrate how each job holder will expand their role to include more responsibility. For example, the person carrying out the testing could have their job enriched by visiting client sites to install the exams results module and test the system in the client environment.

(4 marks)

Syllabus section: Human Resource Management

Part (b)

One of the principles of the UK Data Protection Act 1998 states that appropriate security measures must be taken to safeguard personal data. If alteration of customers' personal details has occurred then it might be argued that appropriate security of personal data has not been provided.

(4 marks)

One of the principles of the UK Data Protection Act 1998 states that personal data has to be collected and disclosed fairly and lawfully. The company should

collect personal customer details via their website in a fair and lawful manner. This means that customers who use the website must be warned that their personal details may be used in this way

(4 marks)

The person who altered the prices and customer details has committed the offences of unauthorised access and unauthorised modification of data under the UK Computer Misuse Act 1990. The person may also have committed the offence of unauthorised access with intent, if fraud or other criminal acts were intended.

(5 marks)

Syllabus section: Legal Obligations

Examiners' comments

This question was attempted by 91% of the candidates, 71% of whom achieved a pass mark.

In part (a), many candidates concentrated on describing the techniques, rather than providing examples and explaining the benefits.

In part (b), candidates typically lost marks by not discussing how the two acts relate to the scenario, often simply listing clauses from the acts.

Question A3

- a) State the **THREE** most important characteristics of a limited company. (6 marks)

- b) Explain the difference between a **public limited company** (plc) and a **private limited** company. (4 marks)

- c) Borth Software Ltd is a small but successful bespoke software company. It now wishes to set up a subsidiary, in the UK, to develop a pensions administration package. The UK government provides grants to encourage the growth of such companies in areas of high unemployment.

As managing director, you are responsible for raising the capital required to get the new subsidiary up and running. You have three sources of finance available, i.e.

- UK government grant
- loan
- sale of equity in Borth Software.

Explain the characteristics of each of these possible sources and outline the issues to be considered in each case.

(15 marks)

Answer pointers

Part (a)

A limited company has a corporate legal identity.

The ownership of a limited company is divided into a number of shares. The shares can be traded.

If the company incurs legal liabilities, the shareholders have no obligation to pay these.

(2 marks for each)

Part (b)

A public limited company is a limited liability company that can offer its shares to the public, either through listing on a stock exchange or through individual transactions. A private limited company is not allowed to do this. (2 marks)

In order to register as a public limited company, a company must satisfy various conditions regarding the membership of the board of directors and the number of paid-up shares. (2 marks)

Syllabus section: Organisations and their Structure

Part (c)

A grant is a sum of money given to the firm, which does not have to be repaid. Such grants are normally made by government (local or national) or occasionally by charities. They may be limited to a certain proportion of the investment made by the firm itself or be dependent on creating a certain number of jobs. There will often be some restriction on the way the grant is spent. The main issue is always whether the conditions that must be fulfilled in order to get the grant are compatible with the firm's business plan. In the scenario it is quite likely that they will not be, because the grants are often not conceived with companies like Borth in mind.

The essential point about a loan is that the repayment terms are independent of the company's performance. The company pays the same interest whether it makes a large profit or a large loss. Loans may be for a fixed term or open ended. The rate of interest may be fixed or variable. At times when interest rates are historically low, a firm will tend to prefer a fixed rate loan; at times when they are historically high, it will tend to prefer a variable rate – lenders' preferences will, of course, be the reverse. The loan may be secured or unsecured. Government schemes may offer unsecured loans to small businesses in certain circumstances. Otherwise, if the company has no significant assets of its own – as may well be the case with Borth – the directors and/or major shareholders may be required to use their own property, in particular, their houses – as security.

The sale of equity in Borth amounts to selling a part of the company. Raising capital in this way means that if the company performs well, the new shareholders will get some of the benefit but, if it performs badly, the new shareholders will share in the misery. However, the new shareholders will own a part of the company and may well want a share – possibly a substantial share – in running it and directing its policies. What's more, the effect of selling part of the equity to raise capital is that it dilutes the value of the shares owned by the existing shareholders.

Syllabus section: Finance

Examiners' comments

This question was attempted by 77% of the candidates, 55% of whom achieved a pass mark.

Parts (a) and (b) have been asked many times. While many candidates were able to answer them correctly, the examiners remain astonished that a substantial number of candidates were unable to do so.

Candidates answers to part (c) were mixed, with only a minority correctly explaining the characteristics of each of the three possible sources. Most candidates who attempted this part of the question were, however, able to explain at least one or two of the three possible sources.

Question B4

- a) Explain what is meant by depreciation. **(4 marks)**
- b) Describe three different ways of calculating depreciation, indicating any advantages or disadvantages of the methods or any circumstances that make a method preferable. **(12 marks)**
- c) For each of the following assets, state which method is most appropriate and explain why.
- i) a large file server bought for £50,000 to support services that your company provides for its clients;
 - ii) the licence for the accounting software that your company uses, which was also purchased for £50,000;
 - iii) a printing machine with a lifetime of two million units.
- (3 x 3 marks)**

Part (a)

Depreciation is the process of spreading the capital cost of an item that is expected to be useful to a business for a long time over the period of its useful life. Each year, the value of the item in the balance sheet is reduced by the amount of the depreciation and an amount equal to the depreciation is entered in the debit side of the profit and loss account.

(4 marks)

Part (b)

Using the straight line method, the depreciation is calculated as the cost of the item divided by the number of years of expected life. This has the advantage of being simple to calculate but the disadvantage of requiring special action when the value of the item falls to zero. It is not really appropriate for situations in which the asset may have an indefinitely long useful life.

In the reducing balance method, depreciation is calculated as a fixed proportion of the book value of the asset (fixed, that is, for a particular category of asset). This deals satisfactorily with assets that have an indefinitely long life and never needs any special action. It is however perceived as more complicated by the less numerate and it can be difficult to decide on the appropriate ratio for calculating the depreciation.

In the case where the useful life of an asset is determined by the level of usage, it may be appropriate to calculate the depreciation on the amount of useful life that has been consumed during the year. This gives a very accurate picture of the asset value but requires careful record keeping.

(12 marks)

Part (c)

- (i) straight line method is appropriate because experience show that it will only be economical to run the file server for say three or four years;
- (ii) reducing balance because the software is likely to be used for an indefinite period;
- (iii) depreciation based on usage. The machine is likely to have a meter that counts the number of copies so that record keeping is

comparatively easy and, if usage fluctuates, this method will ensure that this fact is correctly reflected in the book value of the machine.

Syllabus section: Finance

Examiners' comments

This question was attempted by 25% of the candidates, only 25% of whom achieved a pass mark.

Few candidates showed any real understanding of depreciation as a concept, although most of the candidates who attempted this question had some idea, albeit confused, of either the straight line method or the reducing balance method. Very few candidates were aware that depreciation could be calculated on the basis of usage. Hardly any candidates were able to demonstrate any understanding of how the method used to calculate depreciation might depend on the nature of the asset.

In part (c), while most candidates could answer (i) and (ii) correctly, they could not answer (iii) correctly, although this is surely the easiest.

Question B5

You are a multimedia developer and have developed a number of applications (apps) for mobile telephones.

- a) Explain how the UK Copyright, Designs and Patents Act 1988, and the UK Trademarks Act 1994 could be used to protect the apps that you develop.
(15 marks)

- b) Outline how the apps could be made accessible for those with impaired vision or hearing.
(10 marks)

Answer pointers

Part (a)

Copyright will prevent others from copying the apps, selling copies, or amending the apps, e.g. by translating them into a different language or porting them to a different platform. Copyright does not need to be registered. [8]

The mobile telephone applications could include a trademark. A trade mark is any sign capable of being represented graphically which is capable of distinguishing goods or services of one undertaking from those of other undertakings. The trade mark should be registered (otherwise a "passing off" action may be used). The trade mark prevents others from passing off their apps as yours. [7]

Syllabus section: Intellectual Property Rights

Part (b)

To assist those with impaired vision, reasonably sized sans serif fonts with good contrast between background and foreground text should be used and an option to change font size should be provided. The interface should be compatible with text-to-speech tools. Navigation between content in the application should be straightforward. [5]

There should be hearing aid compatibility and volume controls for users with hearing impairments. [5]

Syllabus section: Legal Obligations

Examiners' comments

This question was attempted by 91% of the candidates, 64% of whom achieved a pass mark.

Question B6

- a) A student member of the BCS, who has been given poor marks by one of his lecturers, writes a blog alleging (falsely) that the lecturer has accepted bribes from other students to increase their marks. How does the BCS Code of Conduct apply to this situation?

(10 marks)

- b) Alice works for a public organisation and dislikes Bob, her boss, because he refuses to agree to her unreasonable requests. She makes a Freedom of Information request to the organisation asking for details of Bob's expense claims. She proceeds to publish these details in her blog, alleging, falsely, that Bob has been claiming expenses fraudulently.

- i) Did the organisation act in accordance with the law when it revealed information about Bob's expenses in response to a Freedom of Information request?

(7 marks)

- ii) What legal remedies are available to Bob?

(8 marks)

Answer pointers

Part (a)

Under the heading Professional Competence and Integrity, section 2f states that you shall "avoid injuring others, their property, reputation, or employment by false or malicious or negligent action or inaction." This is the primary way in which the Code of Conduct relates to the situation. However it is arguable that the conduct in question also infringes two clauses of section 4, Duty to the Profession: a) [you shall] accept your personal duty to uphold the reputation of the profession and not take any action which could bring the profession into disrepute and d) [you shall] act with integrity and respect in your professional relationships with all members of BCS and with members of other professions with whom you work in a professional capacity.

Syllabus section: Codes of Conduct

Part (b)(i)

Guidance issued by the Information Commissioner's Office (ICO) states quite clearly that the public has an interest in knowing how public organisations spend their money and that this extends to salaries and expenses. The guidance states, however, that Bob should be told of the FoI request and given the opportunity to raise an objection, although the organisation need not uphold the objection. The more senior Bob is in the organisation, the more he must be prepared to accept that such information may be revealed.

Part (b)(ii)

This situation is covered by the law of defamation, i.e. damaging someone's reputation. There is no doubt that, if the accusation is false, the blog is libellous. Bob could sue Alice for libel but this is unlikely to be helpful, since she probably doesn't have enough money to be worth suing, or even to pay

Bob's costs. He probably can't sue the service provider for the social media site or the site itself, since they will be protected. A complaint to the service provider is, however, likely to lead to the offending blog being blocked immediately. He could also ask the organisation to take disciplinary action against Alice if there was a sufficient breach of the terms of employment – say in terms of bringing the company into disrepute.

Syllabus sections: Legal Obligations and The Internet

Examiners' comments

This question was attempted by 56% of the candidates, only 2% of whom achieved a pass mark.

In part (a) most candidates ignored the fact that the allegation of accepting bribes was explicitly stated to be false, and concentrated on how the Code of Conduct applies to the taking of bribes.

For part (b), candidates were not expected to be aware of the ICO's guidance. It would have been enough to point out that the DPA and the FoI appear to be in conflict here. In fact, very few candidates saw the conflict and most simply stated that the organisation was in breach of the DPA. Most then went on to invent fanciful legal remedies that Bob could take.

It was particularly disappointing that so few candidates could produce a satisfactory answer to this question, given that it is based on two real-life incidents.