

THE BCS PROFESSIONAL EXAMINATIONS
BCS Level 5 Diploma in IT

April 2008

EXAMINERS' REPORT

Professional Issues in Information Systems Practice

General comments

After improving steadily over the last few sittings, the pass rate this sitting showed a marked decline and the percentage of candidates gaining marks of less than 30% rose to 35%. As in previous sittings, there was one large centre with a pass rate that was well under half the average. All other centres with enough candidates to be statistically significant had broadly similar pass rates.

As usual, some candidates performed extremely well and showed a real and profound understanding of the material; as a result, they gained very high marks. Such candidates were to be found at all centres. Nevertheless, many candidates were clearly inadequately prepared for the examination and lacked the necessary basic knowledge.

It was primarily question 4 that was responsible for the fall in the pass rate. Around three quarters of the candidates attempted this question. This question is quite straightforward and simply tests candidates' knowledge of the provisions of the UK Data Protection Act 1998. However, it was answered very badly by almost all candidates – the average mark on the question was less than 4 out of 25. The poor answers appeared to be the result of candidates learning parts of the Act by rote and then reproducing them parrot fashion, irrespective of their relevance. See below for more detailed comments.

Question 1

The majority of candidates answered this question. On the whole they answered it well. Some answers, however, were far too brief or failed to show a clear understanding of each point.

Write short notes on EACH of the following:

- a) balance sheet
- b) depreciation
- c) business plan
- d) gearing
- e) cash flow statement.

(5 × 5 marks)

Answer Pointers

The **balance sheet** is a statement of the company's value at the time when the statement is drawn up. It shows the company's assets (what it owns) and its liabilities (what it owes) at a single instant in time. The assets are customarily divided into fixed assets, i.e. assets that contribute to the company's productive capacity and are held primarily for the purpose of creating wealth, and current assets, such as debts or stock, which are either already in the form of cash or will be converted into cash in the normal course of trading. The excess of the value of the assets over the value of the liabilities is the balancing item that represents the net worth of the company, sometimes referred to as the shareholders' equity. (5 marks)

Depreciation applies to fixed assets. Since fixed assets normally contribute to the company's earning capacity for a number of years it would be unreasonable to charge the entire cost of the asset against the year of purchase. Instead, the cost is spread over the number of years that the asset is expected to be useful for. This is done by reducing the value of the asset in the balance sheet and charging the corresponding amount as an expense in the profit and loss account. This process is called depreciation. (5 marks)

The purpose of a **business plan** is to explain the company's plans to potential investors and lenders. Its main elements are:

- a description of the company's activities, together with evidence to show that the venture is technically feasible and that the management of the company have the necessary expertise to make the venture a success;
- a description of the target market, an estimate of its size, and an analysis of competitors;
- a financial forecast for the company. This will include cash flow predictions, projected balance sheets and P&L accounts. (5 marks)

Gearing is the relationship between loan capital and equity capital in a company. A highly geared company has a high level of loan capital (debt) in comparison to equity capital. High gearing usually means that a small increase in the company's profit will result in a disproportionately large increase in the value of the shareholders' equity. It encourages the shareholders to pursue high risk policies because they have much to gain and comparatively little to lose. Lenders do not like highly geared companies because they stand to gain nothing from their high risk policies but stand to lose much if these policies cause the companies to fail. (5 marks)

The **cash flow statement** shows the flow of cash and cash equivalents in and out of the company during an accounting period. Depreciation appears as an inflow of cash, because it is shown as an expense in the P&L but is not an actual cash outflow. Items of capital expenditure appear as cash outflows on the cash flow statement although they do not appear as an expense on the P&L. The cash flow statement is thus the link that ties the P&L account and the balance sheet to the capital expenditure. (5 marks)

[Syllabus section 1c]

Question 2

Only around 20% of the candidates who attempted this question were able to explain correctly what is meant by constructive dismissal and some of them lost marks by failing to give the example requested. Part (b) was answered better, with around half the candidates knowing at least who the Act applies to. Part (c) was generally well answered, although a few candidates lost marks by failing to relate their answers to the scenario.

- a) Explain the term *constructive dismissal* and provide ONE example to demonstrate your understanding.

(5 marks)

Answer Pointers

If an employer behaves towards an employee in such a way that the employee feels that he or she has no option but to resign and if the employer's behaviour amounts to a substantial breach of the contract of employment, the law may regard the employer's behaviour as tantamount to dismissal. This situation is known as constructive dismissal and can be the subject of unfair dismissal proceedings, although the fact that it is constructive dismissal does not automatically make it unfair dismissal. (3 marks)

E.g. The employer requires a fully qualified accountant who has been employed as financial controller for the past five years to now work as a caretaker. (2 marks)

[Syllabus section 1i]

- b) To whom does the Public Interest Disclosure Act 1998 (PIDA) apply and whom is it designed to protect?

(8 marks)

Answer Pointers

The PIDA applies to employees who whistle blow i.e. raise concerns over criminal behaviour, activities that endanger health and safety, certain types of civil offences and miscarriages of justice that the employer attempts to cover up. (5 marks)

The Act is designed to protect employees who make disclosures about such malpractices to their managers or to certain prescribed regulatory bodies. (3 marks)

[Syllabus section 1e]

- c) Three techniques are used in the process of *job design*, namely;
- job rotation
 - job enlargement
 - job enrichment.

Explain EACH of the THREE techniques, illustrating how they might apply to the following scenario:-

Mark, Alan and Paul work for a software development company. Mark is the maintenance programmer for the budgeting module of the financial suite. Alan carries out both unit and integration testing on the enhancements written by Mark. Paul develops user test data and carries out all user testing on the enhancements written by Mark, prior to releasing the software to the client.

(12 marks)

Indicative answer points – marks were awarded for other suitable answers.

Job rotation

Could be introduced very simply by arranging that in month 1, Mark does the maintenance (task 1), Alan carried out unit testing and integration testing (task 2) and Paul develops user test data and carries out user testing (task 3). In month 2 Alan does task 1, Paul does task 2 and Mark does task 3. In month 3 Paul does task 1, Mark does task 2 and Alan does task 3.

(4 marks)

Job enlargement

Mark, Alan and Paul might be asked to undertake similar work for the forecasting module of the financial suite. This will result in their jobs expanding to include more jobs at essentially the same level of skill and responsibility.

(4 marks)

Job enrichment

All three roles will expand to include more responsibility. Mark's job could be enriched by allowing him develop part of the new budgeting module that is being introduced as part of the upgraded financial suite. Alan's job could be enriched by allowing him to develop the user test data, which Paul can then use to carry out his user testing. Paul's job could be enriched by allowing him visit client sites to install and test the system, in the end user environment.

(4 marks)

[Syllabus section 1i]

Question 3

Reavera Software Plc produces a range of software packages for the tourism and hospitality industry. The company was founded in 1988 and its headquarters are in London. Over the past twenty years the company has grown from an organisation employing ten people to its current complement of one hundred and twenty. Today, the structure of the company is much the same as it was twenty years ago when it operated in the UK only.

Today, Reavera Software Plc has its European headquarters in London and offices in Paris and Geneva, all of which serve the European market. It has its Asian headquarters in Bangkok and its Australian headquarters in Sydney.

The range of software products offered by the company is the same for all its customers. All development is carried out in London, with all other offices operating as sales centres only. Over the past five years it has become apparent that all the products fail to meet the needs of some customer and, in particular, local requirements are not catered for when software is developed. In addition, customers have expressed dissatisfaction that all support comes from the London headquarters.

The directors of Reavera Software Plc recognise that a fundamental reorganisation of the company is necessary.

- a) Suggest a suitable structure for the company, illustrating your answer with an organisation chart. **(13 marks)**
- b) Explain the advantages and disadvantages of your suggested structure. **(12 marks)**

Answer Pointers

There are many ways of answering this question. The following is simply an indication of what a suitable answer might contain.

The fundamental point is how to develop a suitable structure that incorporates an appropriate mix of functional, product and geographical structures. **(5 marks)**

There is a strong argument for maintaining the London headquarters, but its role must change. It should contain a sales and marketing division, a development and maintenance division, and an operations division.

The sales and marketing division would have sub divisions in each of its offices throughout the world, with each sub division reporting to London and being responsible for its own geographical area. **(5 marks)**

The development and maintenance division might be divided into three; development, maintenance and customer support. Development and maintenance will remain in London (including development of local needs), while customer support should be in each office with a reporting line back to London. **(5 marks)**

The operations division will be headquartered in London with sub divisions in each geographical headquarters. This will ensure London keeps control on all financial and administrative activities, while at the same time enabling each geographical area to carry out its activities in accordance with corporate policies and standards. **(5 marks)**

The main advantages of this structure are that;
Customer support is local and not remote.
Sales and marketing is face to face with the customer and not remote.
Production and maintenance is controlled and at the same time prioritises and responds to ALL customer needs. **(5 marks)**

[Syllabus section 1b]

Question 4

Candidates answering this question commonly were only able to give one or two examples of sensitive personal data. In part (b), many of them simply listed the eight data protection principles. This is not at all what was asked and gained no marks.

- a) In the context of UK Data Protection legislation, explain what is meant by sensitive personal data. How do the rules regarding the processing of such data differ from those relating to the processing of other personal data?

(8 marks)

Answer Pointers

Sensitive personal data means personal data relating to the racial or ethnic origin of data subjects, their political opinions, their religious beliefs, whether they are members of trade unions, their physical or mental health, their sexual life, or whether they have committed or are alleged to have committed any criminal offence. (4 marks)

The rules regarding the processing of sensitive personal data are stricter than for other personal data in that they require data subjects to give explicit consent. This means something more positive than, for example, failing to tick an opt-out box when ordering a product is required. 'Explicit consent' almost certainly requires the nature of the likely processing and any likely disclosure to be made explicit to the data subjects before they give consent. (4 marks)

[Syllabus section 1e]

- b) What rights does the UK Data Protection Act 1998 give to individual citizens?

(17 marks)

Answer Pointers

The right to receive:

- a description of the personal data that a data controller holds about them (1 mark)
- an explanation of the purpose for which it is being held and processed; (1 mark)
- a description of the people or organisations to which it may be disclosed; (1 mark)
- an intelligible statement of the specific data held about them; (1 mark)
- a description of the source of the data; (1 mark)

the right to see any such data; (2 marks)

the right to have the data erased if it is irrelevant or corrected if it is inaccurate; (2 marks)

the right to prevent processing likely to cause damage and distress; (2 marks)

the right to prevent processing for the purposes of direct marketing; (2 marks)

the right to claim compensation for any substantial damage or distress caused to them by improper use of their personal data or by the use of inaccurate. (2 marks)

the right to be informed if any decisions that are taken about them solely by means of automated decision-taking procedures and to request that such procedures be replaced. (2 marks)

[Syllabus section 1e]

Question 5

This question was generally well answered but some candidates answered part (b) by merely defining trade marks and domain names rather than addressing the question set.

- a) The Code of Conduct of the British Computer Society is divided into four main sections. Explain what these sections are and describe briefly the issues addressed by each section.

(16 marks)

Answer Pointers

Candidates are expected to outline the main clauses in the Code of Conduct, as shown below. Credit will be awarded for depth of understanding of the code rather than ability to state the clauses perfectly or to put them in the right section. Most candidates are likely to be able to identify a number of the areas and describe the issues covered in the Code of Conduct.

The public interest: this describes members' responsibility to be aware of, and comply with, relevant aspects of the law and other forms of regulation and, more generally, to safeguard public health, protect the environment and have regard for human rights. (4 marks)

Duty to employers and clients: this deals first with due diligence, warning clients of the consequences of their decisions and time and cost overruns, and maintaining confidentiality. It then goes on to require members to avoid various corrupt practices such as the giving or taking of bribes, misrepresentation or false claims of independent judgment. (4 marks)

Duty to the profession: generally acting in such a way as to uphold and enhance the standing of the profession, including advancing public knowledge, countering false or misleading statements (and not making them themselves), and encouraging professional development, particularly for new entrants to the profession. (4 marks)

Professional competence and integrity: keep up to date, conform to good practice, don't claim competence that you haven't got, accept full responsibility for your work and avoid conflicts of interest. (4 marks)

[Syllabus section 1h]

- b) Describe how the scope of Internet domain names differs from that of trade marks and explain how this can lead to conflicts.

(9 marks)

Answer Pointers

Domain names are unique. Any given domain name can only be used by one organisation in the world. In contrast, the owner of a trade mark only has rights over it in a particular country or region. Furthermore, these rights only apply to the class of products for which it is registered. Thus, if company A holds a trade mark for soft drinks, it is possible for company B to register a similar trade mark for lathes, because there is no danger of confusion. (5 marks)

Conflicts arise when a company that owns a trade mark finds that another company owns the domain name that corresponds to the trade mark. This may happen innocently, e.g.. because the second company owns the rights to the trade mark in another region or for a different group of products, or it may be done deliberately ('cyber squatting') by a company that has registered the domain name in the hope of being able to sell it to the trade mark owner.

(4 marks)

[Syllabus section 1f]

Question 6

Very few candidates answered this question but many of those who did gained good marks. Many candidates did not take all the money items as costs – assuming it was a normal cost/benefit calculation. What was needed was to calculate the total cost over the lifetime. Most candidates understood why DCF was used, but only some were able to give appropriate factors that would affect the decision and very few considered the impact these factors would have.

The simplified discount rates given in the question were intended to be interpreted as $\text{discounted value} = \text{value} / \text{discount rate}$ but most candidates assumed $\text{discounted value} = \text{value} * \text{discount rate}$, thereby increasing the value. Either approach was accepted.

Truck Hire supply lorries and vans for hire, primarily to other businesses. They are reviewing their web site operations with a view to being able to allow customers to book vehicles directly online. Two alternatives under consideration are to purchase and manage their own server, or to use an external web hosting organisation. The internal server would also cost staff time and licences. The hosting company's charges are based on storage and usage volume that are predicted to rise and Truck Hire would have some initial expenditure on telecommunications equipment.

Cost	Internal Server (£)	External Host (£)
Immediate capital outlay, i.e. Year 0	4,000	500
Year 1	2,200	2,200
Year 2	2,400	3,000
Year 3	2,600	3,900
Year 4	3,000	4,500

The company has estimated that the cost of capital is 10 per cent, which equates to the following approximate discount rates.

Year 1	1.1
Year 2	1.2
Year 3	1.3
Year 4	1.5

For each option:

- using an appropriate cash flow chart, calculate the net present value of the total life cost over four years; **(14 marks)**
- identify the preferred option based on cost alone; **(2 marks)**
- briefly discuss the advantages of using discounted cash flow as a way of assessing the value of the investment; **(3 marks)**
- state two factors that Truck Hire should take into account in deciding whether to outsource and explain how these factors might affect the decision. **(6 marks)**

Internal server	Year 0	Year 1	Year 2	Year 3	Year 4	NPV
Outlay	4000	2,200	2,400	2,600	3,000	
discounted	4000	2,000	2,000	2000	2000	12000
Web host						
Outlay	500	2,200	3000	3,900	4,500	
discounted	500	2000	2500	3,000	3,000	11,000

- 6 marks for the cash flow chart layout & use; 4 for the cash values; 4 for the NPV calculations
- web host **(2 marks)**
- takes into account the time value of money, i.e. interest foregone or interest paid out. **(3 marks)**
- any two sensible factors e.g. vendor quality / expertise, hidden costs in managing the vendor, or contractual flexibility v. ability to increase hosting capacity. **(2 x 2 marks)**
These might change the estimates of the payback period or may override the marginal advantage that NPV of the web host alternative has. **(2 marks)**
[Syllabus section 1d]