

THE BCS PROFESSIONAL EXAMINATION

Diploma

October 2003

EXAMINERS' REPORT

Professional Issues in Information Systems Practice

General

This is the first time that this module has been offered for examination in October. The results have reversed the upward trend in the pass rate that had been observed in the April sittings. The pass rate is very substantially lower than in the April 2003 sitting. The mean mark is substantially below the pass mark. The commonest cause of low marks seems to be lack of knowledge, rather than the inability to apply it; again this is in contrast to the situation observed in the last two April sittings, when the commonest cause of low marks was candidates' inability to apply theoretical knowledge to specific scenarios.

The most likely explanation of this is that many candidates are using the October sitting to have a trial run at the examination before they are properly prepared for it. The examiners do not feel that the paper was in any way more difficult than the April 2003 paper.

Apart from question 3, which was clearly unpopular, there were no major differences in the popularity of the questions. Questions 1 and 2 attracted the best answers on average and questions 3 and 6 the worst.

Note that the references to syllabus sections in what follows are references to the *old* syllabus, that is, the syllabus on which this examination was set. This syllabus will be discontinued after April 2005.

Question 1 (syllabus section 1)

- a) Briefly identify five responsibilities of the Engineering Council within the UK engineering profession. **(5 marks)**

This question looks to see if the candidate understands how the Engineering Council fits into the UK engineering professional bodies in terms of its activities and responsibilities. A relatively brief bullet point list such as that below was sufficient, although further detail helped to consolidate the marks. The majority of candidates were able to answer this question.

- umbrella organisation for the 40+ UK engineering institutions encouraging collaboration and multi-disciplinary work
- represents the profession as a whole, acts as UK member on international bodies
- regulates the profession / set standards for engineering professional
- maintains register of chartered engineers
- cooperates with UK Government on matters of law, education, etc.

- b) Identify four key roles and/or responsibilities of the BCS and, using examples, explain how these are fulfilled. **(12 marks)**

Answer Pointers

Candidates were expected to explain how the BCS fulfilled its responsibilities under the EC and Royal Charter. For each area identified there were 2 marks for clearly outlining the area of responsibility and another for providing a good example. Typical areas and examples were:

- to advance knowledge in the area...e.g. involvement in ECDL
- uphold professional competence...e.g. professional development portfolio
- set related education standards...e.g. accreditation /benchmarking
- defining standards for professional conduct...e.g. code of conduct
- advising UK Government, e.g. on related law such as the Computer Misuse Act.

Examiner's Comments

Unfortunately a significant number of candidates misread this question as responsibilities of the members of the BCS and so either stated the code of conduct or, at best, answered the question using the code as a structure with examples. As this was not what was required these answers did not attract much credit. [A lesson perhaps in reading the question carefully]

- c) One of the responsibilities of being a member of the BCS is to maintain your own knowledge and professional competence. Identify two examples of how being a member of the society would help to achieve this goal. Discuss each example in detail. **(8 marks)**

Answer Pointers

Two suitable examples are:

- Using a professional development portfolio to plan and undertake personal development. This can be done in conjunction with career planning or company appraisals. Each activity, whether a formal course or a work-based activity, is credited. The BCS support this through the provision of courses, local groups and appropriate documentation
- being a member of a specialist group can: help to be aware of current knowledge in that area through publications and meetings; build a network of contacts; encourage the member's own work to be published; encourages the application of new ideas from across the profession.

[4 marks each: 2 for outlining the example and 2 for further detail or discussion]

Examiner's Comments

Most candidates were able to identify suitable examples but tended to either repeat material from their answer to (b) or were unable to provide the level of specific detail to get full marks.

Overall the question was well answered candidates achieved high marks except where part (b) was answered incorrectly.

Question 2 (syllabus section 3)

- a) Employees of Syniad Software plc 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. Syniad 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.

Calculate the average direct cost one day's work from an employee earning £20,000 per year. State explicitly any assumptions you make. **(10 marks)**

Answer Pointers

A relatively straight-forward calculation that most candidates succeeded in completing. In questions of this sort it is important that candidates show their working. Marks can be given for correct reasoning even if the arithmetic is wrong.

4 marks for the number of productive days per annum:

Assume a normal year with precisely 52 weeks....some lost marks by assuming 4 weeks less [12x4]. Others ignored aspects of the information such as public holidays we can assume 10 public holidays to make the numbers easy. .

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 days. Other assumptions were accepted where reasonable (e.g. more days in the working week, less holiday entitlement).

4 marks for the calculation of annual direct cost to the employer

$£20,000 + 6\%$ for social security = £21,200.

Some, perhaps misunderstanding, deducted the 6%. The inclusion of other direct costs was allowed but the inclusion of indirect costs was penalised

2 marks for the final calculation of the daily direct cost for each productive day which is therefore $£21,200/200 = £106$.

- b) XYZ plc is a large import/export organisation. It owns computer and communications equipment that cost some £45,000 in total when it was bought. The equipment was bought from ABC plc; some of it was held in stock at ABC and some of it was specially ordered by ABC.

Compare and contrast the way that the equipment would be treated in the accounts of the two companies. **(15 marks)**

Answer Pointers

In the case of XYZ, the equipment has been purchased to increase the productive capacity of the company. It will be useful for several years. It is therefore appropriate to treat it as a fixed asset. This means that, when each item is purchased, an entry is made in the asset register recording the date and cost of the item. The amount paid will appear in the cash flow statement for that financial year. It will be depreciated over its useful life, leading to a charge on the profit and loss account each year, and it will appear in the balance sheet each year at its written-down value. Some understandably assumed they could be exporting the equipment and therefore due allowance was made for that assumption.

In the case of ABC, the equipment is nothing to do with its productive capacity. It is equipment that is bought and sold as part of the company's normal trading operations. It is therefore treated as stock-in-trade. At the end of the financial year, it will be valued at the lower of the purchase price and the resale price and will appear as a current asset in ABC's balance sheet. The treatment of the purchase (and sale in the books)

either for cash or as a current liability was understood by some, and many mentioned the link to the profit and loss account, but often with a poor understanding of the exact method of creating the account.

Examiner's Comments

Most candidates were able to explain the nature of the assets and their treatment in the balance sheet.

Question 3 (syllabus section 8)

- a) Discuss the differences between the project management of systems development and systems maintenance activities. **(9 marks)**

Some students were somewhat unclear as to the differences between systems development and systems maintenance with regard to project management. Systems maintenance typically involves multiple on-going projects that are more time critical and more difficult to plan for than systems development.

- b) An important aspect of managing IT projects is the ability to estimate the time and effort required for a given project. Discuss three different ways in which you could estimate the time and effort required. **(9 marks)**

Answer Pointers

Estimation can be done via historical, intuitive and standard formula approaches. Some students confused project estimation with project management and provided less relevant answers. Activity networks can be useful in estimating time and resource requirements but most candidates citing them were clearly confused.

- c) Discuss the differences in purpose and use of Gantt and PERT charts for managing IT projects. **(7 marks)**

Answer Pointers

PERT charts show task dependencies and the critical path. Gantt charts show the breakdown of tasks on a segmented time frame basis and can also show project progress and resource allocation. Most students were able to describe the differences clearly.

Question 4 (syllabus section 4)

- a) 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

DPA 1998 – was adequate security applied? Was personal data gathered in a fair and lawful manner? CMA 1990 – unauthorised access, unauthorised modification, possibly unauthorised access with intent to commit a further criminal act.

- b) Explain why it is necessary to display terms and conditions of purchase on an e-commerce website. **(4 marks)**

Answer Pointers

Terms and conditions are shown in an attempt to avoid consumer disputes.

- c) Explain why it is necessary to have a disclaimer on a website to inform users of the website when cookies are being used. **(4 marks)**

Answer Pointers

Cookies can invade the privacy of customers by covertly gathering personal data in an 'unfair manner'.

- d) Discuss how the UK Disability Discrimination Act 1995 might apply to the design of an e-commerce system. **(4 marks)**

Answer Pointers

DDA 1995 – section 21.1 – duty of service providers: websites should be designed so as to cater for disabled users as far as is reasonably possible.

Examiner's Comments

Most students answered this question well showing appropriate understanding and application of the UK Data Protection Act 1998, UK Computer Misuse Act 1990 and UK Disability Discrimination Act 1995.

Question 5 (syllabus sections 2 and 7)

- a) Describe the system of Management by Objectives. **(8 marks)**

Answer Pointers

The management by objectives (MBO) system is designed to integrate the goals of superior and subordinate managers with those of the overall organisation. MBO specifies each manager's area of responsibility in terms of expected results. MBO provides a basis for operational objectives as well as the evaluation of job performance and contributions of managers and their respective staffs.

2 marks each for the following points:

- integration of goals,
- expected results,
- basis for operational objectives,
- evaluation of job performance and contributions.

Examiner's Comments

Very few candidates correctly described the system of Management by Objectives. Some candidates referred to the three levels of management (strategic, tactical and operational), but did not describe the need to integrate the goals of each level.

- b) Describe the liability and responsibility of the board of directors of a company. (7 marks)

Answer Pointers

The board of directors is the governing body of the organisation. It is elected by the shareholders to run the company on their behalf. [2 marks]

- Directors must act in good faith.
- Directors must act for the benefit of the company.
- Directors must exercise the skill and care in carrying out their duties that might be expected from someone of their qualifications and experience.
- A director who has an interest in a contract made with the company must disclose this interest to the board of directors.
- If the directors allow a company to incur debt when they know or should know that the company will be unable to repay, they can be made personally liable for the debts. [1 mark each]

Examiner's Comments

This part of the question was very well answered by the majority of the candidates. Some of the weaker candidates displayed incorrect knowledge of the liability and responsibility of a board of directors.

- c) Describe some of the strategies used by organisations to improve job satisfaction and employee motivation. (10 marks)

Answer Pointers

The principle of re-enforcement holds that reward and punishment can control behaviour. Rewards are positive re-enforcement when they are tied directly to desired or improved performance e.g. bonus to project manager for delivering project in accordance with specification, on time and within budget. Punishments are generally less effective e.g. reduction in salary of project manager should he/she fail to deliver project in accordance with specification, on time and within budget.

Management by objectives, participative management and empowerment can improve job satisfaction and motivation by making employees feel part of a team. Job enrichment, job redesign and modified work schedules (e.g. flexitime, telecommuting, job sharing) can enhance job satisfaction by adding motivation factors to jobs in which they are normally lacking.

4 marks for commenting on the principle of re-enforcement.

2 marks for each relevant methods identified, up to a maximum of 6 marks.

Examiner's Comments

Many candidates limited their answer to job enrichment, job enlargement and job rotation. They omitted to comment on the principle of re-enforcement.

Question 6 (Syllabus sections 4 and 5)

- a) AMOS Ltd., a computer game developer, accessed ZULU Ltd's intranet to discover the design for a prototype game being developed by this competitor. Discuss how each of the following statutes relates to this situation.
- i) the UK Computer Misuse Act 1990.
- ii) the UK Copyright, Designs and Patents Act 1998. (10 marks)

Answer Pointers

- i) CMA 1990 – there are three possible offences:
1. Unauthorised access.
 2. Unauthorised access with intent to commit a serious crime.
 3. Modification.

The third offence is not applicable in this case. The second offence is possible, but breach of copyright is not of itself a crime. It would be necessary to show in court that AMOS was intending to commit secondary infringement, that is infringement in the course of trade; there is still doubt as to whether this is a serious crime. It is also likely to be difficult to prove. The first offence is therefore the most likely and can be tried in a magistrates court with a maximum penalty of 6 months imprisonment or \$5,000 fine. One mark each for identifying the three possible offences.

2 marks for identifying the most likely offence and its punishment.

Examiner's Comments

Very well answered with many candidates making reference to the three offences.

Answer Pointers

ii) C.P.D.

The design is covered by copyright as it is more than an idea and has a tangible form (writing or documents). It is covered as a literary work and so lasts for 70 years after death. Copyright belongs to the author/employer. ZULU would have to sue for damages but these are likely to be nugatory since, at this stage, only primary infringement is involved.

3 marks for identifying that the design is covered by copyright.

1 mark for stating that it last for 70 years after death.

1 mark for stating that ZULU would have to sue for damages.

Examiner's Comments

A good number of candidates incorrectly assumed that the design was covered by patent. If this were the case, the design would be in the public domain.

- b) Waltz, a car manufacturer, decided to introduce a new intelligent braking system into its Danube range. The contract to develop the braking system is awarded to March, a brake specialist. A year after the introduction of the new braking system, Waltz was approached by a customer, Mr. Strauss, following an accident in which he was injured. It appeared to have been caused by the fact that pressing the brake pedal had failed to activate the brake. Waltz has persuaded Mr. Strauss that the problem lies within the braking system and he has decided to pursue a claim for negligence. Discuss whether he has a case. (15 Marks)

Answer Pointers

To sue for negligence, Mr. Strauss has to show:

- there was a duty of care.
- that duty of care was breached.
- harm was caused due to breach of duty.

Duty of care. Anyone involved in the production of a good is likely to have duty of care to take reasonable care that the product is fit for purpose. This goes beyond the immediate customer [Waltz] to anyone who might use the product [i.e. any driver]. Was ownership of duty therefore at the car level [Waltz] or component level [March].

Breach of duty. This is not absolute, so it will be down to the two parties to show whether sufficient care was taken compared to the risk [potential fatality in this case] and this is difficult for the claimant to prove. March can provide documentation to show that they have followed good practice and tested for situations similar to the one that resulted in the accident.

Harm was caused due to breach of duty. Thirdly, Mr. Strauss has to show that the negligence caused harm [and that it was not due to bad driving – so he would have to provide engineering evidence to show the failure with the braking system].

It is however likely that the Consumer Protection Act 1987 is applicable in this case, since personal injury is involved and the product that Mr Strauss bought certainly constitutes 'goods'. It would not therefore be necessary to prove negligence but it would be necessary to prove that the injury was due to failure of the braking system.

2 marks each for identifying duty of care, breach of duty and harm was caused due to breach of duty.

3 marks for each of the discussions.

Examiner's Comments

Very few candidates identified what Mr Strauss had to show in order to sue successfully. A small number of candidates incorrectly stated that either Waltz or March had failed to uphold the BCS code of conduct. Overall, this part of the question was poorly answered.