INFORMATION AND FINANCIAL MANAGEMENT

Professional 1
June 2002

MARKING SCHEME

CIPFA

Question 1

(a)

(i) Hacking. Hacking is the business of gaining *unauthorised access* to a computer system. It is generally concerned with those people wishing to gain access to an organisation's data with a malicious or mischievous intent. Hacking has been made possible by organisations using open telecommunications networks, which are accessible to the hacker using modems and workstations.

2 marks for description

(ii) If the subsequent investigation finds the accountant guilty she will have committed an offence of *unauthorised modification*, using the *Computer Misuse Act*. She has caused this by an unauthorised modification of the contents of a computer system.

1 mark for Computer Misuse Act, 1 mark for Unauthorised Modification
1 mark for explanation. Up to a maximum of 3

(b) There are three main types of computer virus: boot sector, link and parasitic.

The boot-sector virus may infect both floppy and hard disks. The boot sector of a disk contains instructions which are executed every time the computer is switched on or reset. Therefore, if such a virus exists it will be executed every time the computer is switched on, before virus detection utilities may operate. This type of virus is said to account for 50% of all virus infections.

A link virus attaches itself to the directory structure of a disk. Therefore, the virus can manipulate file and directory information. Link viruses become embedded in the affected data. Removing the virus can often result in a loss of data.

Parasitic viruses (or file infectors) insert copies of themselves into legitimate programs, such as operating system files. Many such programs are classified as terminate and stay resident: being stored in the computers memory, performing various operations in the background.

(Bocij et al, p. 558)

Other reasonable answers include:

- Worms, a program that moves randomly through a computer system randomly changing or overwriting pieces of data.
- Trojan horses, which appear as legitimate programs in order to gain access to a computer system.
- Time (or logic) bombs, where a program is programmed to activate on a certain date or in reaction to a specific event
- Email viruses

Other reasonable answers accepted
1 mark for identification of each type of computer virus
1 mark for each description, Up to a maximum of 6

(c) Reports indicate that 40-60% of computer viruses are transmitted as a result of employees, maintenance engineers and consultants inadvertently introducing programs via floppy disks. Illegal software is another reason why computer viruses may be transmitted. Bulletin Board Systems (BBS) and shareware are also identified as significant factors in the spread of computer viruses. BBSs allow users access to e-mail, discussion forums and file libraries containing Freeware or Software. Each of these provides a medium for the transmission of computer viruses.

Other reasonable answers accepted
½ mark for each point made, up to a maximum of 2 marks

(d)

- Restrict unauthorised access to machines as far as possible.
- Regularly check machines and software using an up-to-date virus detection software.
- All new disks and software originating from external sources should be checked using virus prevention software.
- Floppy disks should be write protected as it is very difficult for a virus to copy itself onto a write protected disk.
- Floppy disks should not be kept in the drive when the machine is booted up. The majority of viruses originate from boot-sector viruses which occur when the machine is switched on or reset.
- Regular backups of data and program files should be made to minimise the damage caused if a virus infects the system.

(Bocij et al, p. 562)

Other reasonable answers accepted
½ mark for each point made, up to a maximum of 2

(15)

Question 2

(a)

(i) Deterministic (or mechanistic) systems outputs can be predicted by an examination of their inputs. An example of a deterministic system is an electronic calculator, where the results can be predicted with certainty.

In a probabilistic (or stochastic) system, the outputs of a system cannot be predicted with complete accuracy. For example, a sales forecasting system is an example of a probabilistic system. It is impossible to forecast with certainty what sales forecast it will produce. Such systems usually operate using a range of probabilities alongside input variables. (Bocij *et al*, p. 346-7)

1 mark for definition of each system
Up to 1 additional mark for description of each system. Up to a maximum of 4

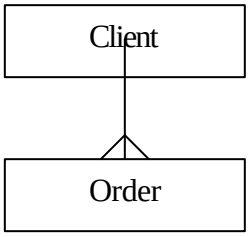
(ii) A hard system has an explicit objective, and is governed by fixed rules and procedures. The conditions in the system's environment tend to be stable and therefore more predictable. In turn, the system's outputs can be predicted more easily and its performance measured objectively. A production line is an example of a hard system.

A soft system, by contrast, operates in a relatively unpredictable environment. In such an environment, conditions may be liable to rapid change. Soft systems usually involve people or socio-technical situations. For example, a model of a social services department's counselling system is an example of a soft system. (Bocij *et al*, p. 346-7)

1 mark for definition of each system
Up to 1 additional mark for description of each system
Up to a maximum of 4

(b) An entity-relationship model is comprised of two constructs. Entities (or entity types) are depicted as rectangular boxes. Entities are significant things or objects that the organisation wishes to hold information about. The content of each entity type is typically shown in normalised tables at the bottom of the diagram. Using the example shown below, each individual Order is identified by a unique Order-#. Order's other attributes are shown in the entity definition.

The lines between the boxes represent relationships. These lines show that relationships exist between entity types. In the example shown below, a Client may place more than one order, but each order is placed by one Client. The 'crow's foot' symbol represents the many sides of the relationship.



Up to 2 marks for example, Up to 1 mark for each other relevant point made
Up to a maximum of 5

(c) The traditional waterfall model identifies the following stages:

- Initiation – the start-up phase in an IS development project. Its aims are to establish whether the project is feasible and then prepare to ensure the project is successful.

- Feasibility – an activity at the start of the project to ensure the project is a viable business proposition. The feasibility report analyses the need for and impact of the system and considers alternatives for acquiring software.

- Analysis – the capture of the business requirements of a system from talking to or observing end-users and other information sources (eg existing systems documentation).

- Design – defines how the system will work in key areas of user interface, program modules, security and database structure.

- Systems build – describes the creation of software by programmers. This includes building release versions of the software, constructing and populating the database, and testing by programmers and end-users.

- Implementation and changeover – involves the transition from the old system to the new and the preparation for this to happen. This includes ensuring the network and hardware infrastructure are in place, testing of the system, and staff training.

- Maintenance and review – after the system has been signed off as suitable for users. It involves reviewing the project and recording and acting on problems with the system.

(Bocij et al, 1999: 253-259)

Other reasonable answers acceptable (including post-implementation review)
½ mark for identification of each stage, ½ mark for brief description
Up to a maximum of 7 marks.

(20)

Question 3

To: William Thomson

From: Consultant

Subject: Mr Quadbike

Date: June 2002

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1 mark for report format, 1 mark for other presentational issues (ie good use of tables etc)

(a) Current ratio = Current assets / Current liabilities

2002 338/345 = 0.98

2001 172/166 = 1.04

Acid test = (Current assets – Stock) / Current liabilities

2002 (338 – 110) / 345 = 0.66

2001 (172 – 45) / 166 = 0.77

Both ratios indicate that liquidity has worsened over the period 31.3.2001 to 31.3.2002. This is also reflected in the increase in the bank overdraft from £49,000 to £155,000. Both ratios are below industry norms which indicates Mr Quadbike may face a potential liquidity problem. The liquidity problem may mean Mr Quadbike's current assets are insufficient to meet demands from creditors. For example, creditors may reduce credit available to Mr Quadbike, and leases will require debt servicing payments. The increase in indebtedness indicates Mr Quadbike has been using debt to cover working capital requirements.

Finally, what is most worrying is that we are advised Mr Quadbike has an overdraft limit of only £150,000. The accounts indicate that Mr Quadbike has borrowed £155,000 – in excess of £5,000 on the agreed limit. An overdraft is repayable on demand and the company's bankers are likely to be very concerned about this apparent oversight. Mr Quadbike should therefore negotiate a short-term increase in its overdraft limit and develop a strategy to reduce this short-term indebtedness problem.

½ mark for each correct ratio calculated and
1 mark for each relevant point made, up to a maximum of 7

Working capital management

Trade debtor turnover = (Trade debtors / turnover) x 365 days

2002 223 / 796 x 365 days = 102 days
2001 118 / 442 x 365 days = 97 days

Stock turnover = (Stock / cost of sales) x 365 days

2002 110 / 404 x 365 days = 99 days
2001 45 / 228 x 365 days = 72 days

Trade creditor turnover = (Trade creditors / cost of sales) x 365 days

2002 (70 / 404) x 365 days = 63 days
2001 (54 / 228) x 365 days = 86 days

Both the stock and trade debtor activity ratios signal a large increase in stocks and in granting credit to customers. This has led to a considerable increase in investment in short term assets. At the same time, the level of credit taken from suppliers has fallen. In 2002, the company's investment in trade debtors, stocks less the credit taken from trade creditor is £263,000. This investment represents an increase of £154,000 on the comparable figure of the previous year (£109,000).

The cash conversion cycle represents 138 days of sales (cost of sales) (102 + 99 – 63). This is compared to an industry norm of 48 days of sales (cost of sales). In summary, Mr Quadbike is radically over-investing in working capital.

Specifically Mr Quadbike may wish to consider the following points:

Stocks. Identify why the investment in stocks is so high and rising. Also, the controls in place over stock levels should be reviewed. A danger of holding high levels of stock is that inventory can become obsolete. If employees perceive there is little control of stock, instances of theft may occur.

Debtors. Allowing trade debtors terms of sale of 102 days seems excessive. It is likely the terms of sale are much less than this (eg 30 or 60 days being typical). The industry average of 78 days (versus Mr Quadbike's 102 days) indicates a lack of control over the level of trade debtors. Mr Quadbike should consider improving systems for chasing debtors. The company should also consider granting discounts for prompt payment, or the use of factoring or invoice discounting.

Creditors. The only activity to decrease over the period is trade creditor turnover. This may indicate a number of things. Potentially the worst scenario is that creditors have been tightening the terms of sale to Mr Quadbike. They may have done this as they perceive Mr Quadbike to be a poor credit risk, either reflecting formal credit analysis or that Mr Quadbike has been a poor payer in the past. Alternatively, Mr Quadbike may not be taking full advantage of some trade creditors, or may be taking advantage of prompt payment discounts. In either case, a system needs to be in place to ensure trade creditors are managed to best advantage by Mr Quadbike.

½ mark for each ratio calculated, up to 1 mark for each relevant point made
Up to a maximum of 11

(20)

(b) Mr Quadbike could improve its financial management in a number of ways – these include:

- Hiring a full-time financial controller or financial director to improve control systems within the company.
- Developing a formal plan or budget with specific working capital and funding targets.
- Improving cash management procedures. Procedures for cash flow forecasting, managing banking arrangements and managing cash surpluses should be developed.
- Considering the management of stocks. Stock levels should reflect production process, and Mr Quadbike should aim to maximise production whilst minimising stock levels.
- Developing procedures to manage trade debtors. Controls should include: prompt invoicing, chasing late payers, credit vetting, bad debts controls and generation of reports to assist managers identify poor payers (eg age debtors report).

- Develop procedures to manage trade creditors. This should include negotiation of credit terms and proper consideration of discounts for prompt payment.

Up to 1 mark for each point made, up to a maximum of 5

(25)

Question 4

(a)

MEMORANDUM

To: Chief Executive

From: CIPFA Student

Subject: PRINCE and FAME project

Date: June 2002

Up to 2 marks for presentation

PRINCE is a project management methodology that has been developed to be compatible with the system methodologies in government projects. It is also being widely used in commercial organisations. It offers a structure which is applicable to large projects that employ more than 10 people.

PRINCE has four main project aims:

- To deliver the required end-products
- To meet the specified quantity
- To stay within budget
- To deliver on-schedule

As such, PRINCE would appear suitable for use in the FAME project. PRINCE aims to maximise user involvement and communication between members of the team by defining an organisational structure and set team roles. A number of steering committees guide the project. These include:

- Project steering committee – to define and assess the feasibility of the project
- Project executive committee – responsible for the implementation of projects and resource allocation
- Project board – to manage the implementation of the project, and appointed by the project executive committee

Up to 1 mark for each relevant point made, up to a maximum of 4

The advantages of PRINCE include:

- Standardisation throughout the organisation
- Logical and comprehensive
- Clear definition of project aims (delivery of end products, to meet specified quality, to keep within budget and to deliver on time)
- Full documentation guaranteed

The disadvantages of PRINCE are:

- The need for training in the methodology
- Appears bureaucratic and time-consuming
- Stifles creativity
- Treats all projects as the same
- All projects subject to method

Up to 1 mark for each relevant point made, up to a maximum of 4

(10)

(b) Best Value originated as a result of the determination of the government to improve accountability and performance within the public sector. The key features of Best Value (as set out in the Green Paper "Improving Local Services through Best Value", DETR, March 1998) are:

- The imposition of duties on local authorities to demonstrate Best Value and consult with local taxpayers, service users and businesses in so doing.
- The adoption within every local authority of a rigorous performance management framework, linking clearly stated corporate objectives to service delivery and to be subject to independent audit and inspection.
- The creation, publication, implementation and review of performance plans developed in consultation with local people.
- The retention of a basket of standard national performance indicators, against which local authorities would be assessed.
- The provision for intervention by the Secretary of State where an individual local authority failed to deliver Best Value.

1 mark for definition of Best Value, ½ mark for each relevant point made
Up to a maximum of 5

The Best Value performance measurement framework (White Paper "Modern Local Government: in touch with the people") establishes the following steps:

- Establish authority-wide objectives and performance measures.
- Agree programme of fundamental performance reviews of selected areas of performance.

- Set and publish performance and efficiency targets.
- Independent audit/inspection and certification.
- Areas requiring intervention to be refereed by Secretary of State.

1 mark for each relevant step identified, up to a maximum of 3

Best Value frameworks are applicable at present to local authorities. A key concept within Best Value is the need to consult with external stakeholders (beyond government). It is not clear who these stakeholders may be, but could include:

- Local businesses who may look to the project to employ completing students/graduates.
- Local people, including those interested in studying music and creative media.
- The music and creative industry.
- Potential partners including universities, local authority arts representatives, economic development agencies and other business support agencies.

1 mark for each relevant point made ,up to a maximum of 4

(12)

(c) The Balanced Scorecard is designed to provide an overview of a series of indicators providing comprehensive performance information. It aims to provide a balance between:

- Quantitative and qualitative measures
- Short-term and long-term measures
- Indicators which lead and those that lag
- Measures which are action-oriented and those that monitor

The construction of the scorecard directly relates to the organisation's strategy. The critical success factors to achieve that strategy should be included within the scorecard. Furthermore, the scorecard will incorporate cause and effect relationships. Monitoring performance against these measures can validate the assumed relationships.

The scorecard can also be applied to other levels of the organisation, to ensure organisational activity is consistent with strategy.

1 mark for definition, ½ mark for each other relevant point made
Up to a maximum of 3
(25)

Question 5

(a)

(i) Spreadsheets

A spreadsheet is a flexible modelling package with a range of statistical and numerical analysis features. A budget is an example of how spreadsheets can be used to good effect to provide internal financial information. A template is constructed of income and expense items, and then the user simply inserts items under the appropriate headings.

Other reasonable answers accepted, 1 mark for description, 1 mark for example

(ii) Accounting packages

An accounting package will consist of a number of modules including sales order processing, inventory, payroll and budgeting.
Typically, accounting packages will provide a suite of financial information which includes invoice statements, monthly budget statements, and other financial items needed to run an organisation

Other reasonable answers accepted, 1 mark for description, 1 mark for example

(iii) Financial modelling packages

Accounting packages are aimed at providing operational information. Financial modelling packages are aimed at supporting strategic and tactical levels of decision making. The types of facilities for strategic planning include: corporate financial forecasting models, merger and acquisition strategy, budgeting and new product assessments.

Other reasonable answers accepted, 1 mark for description, 1 mark for example

(iv) Enterprise resource planning applications

Enterprise resource planning (ERP) software aims to provide an integrated function for major business functions such as production, distribution, sales, finance, and human resource management. ERP software is usually purchased as an off-the-shelf package, with modules for each major business or organisational process. ERP packages are particularly useful where it is useful to integrate information from other functions (eg sales, distribution) with financial information.

Other reasonable answers accepted, 1 mark for description, 1 mark for example
(8)

(b) The most important factors looked for in an accounting package, include:

- Reliability.
- Ease of use.
- Functionality.
- Performance.
- Should fit-in with country-specific or local practices.

Other factors might include:

- How well it cover the basics, ie accounts receivable and payable plus general ledger. That the package produces appropriate reports.
- Whether it can support multiple users.
- The amount of analysis tools available. For example, can the accountant 'drill-down' to locate the detailed transactions of an individual debtor? (Bocij et al, p. 238)

Other reasonable answers accepted, ½ mark for identification of each factor
Up to a maximum of 3

It is likely most accountants will consider that the most important feature of an accounting package is the accuracy and reliability of the system. *1*
(4)

(c) Intranets are private networks for staff within a company that use standards, protocols and tools of the Internet (eg web browsers). They provide a cheap and simple way to connect people in organisations with information they need. This might include: telephone directories; staff procedures (eg financial procedures); staff bulletins; and details of training courses.

½ mark for each point identified, up to a maximum of 1

A computer network is a communication system that links two or more computers and peripheral devices and enables transfer of data between components. Local area networks (LANs) are small-scale computer networks within a workgroup or single office.

½ mark for each point identified, up to a maximum of 1

An intranet is typically delivered over a LAN – or if the organisation operates on a national or international basis over a wide area network. A LAN is a communications system. Whilst an Intranet is an information systems application which uses a LAN. *1*

Up to a maximum of 3

(15)