

THE BRITISH COMPUTER SOCIETY

THE BCS PROFESSIONAL EXAMINATION Professional Graduate Diploma

MANAGEMENT INFORMATION SYSTEMS

28th April 2005, 2.30 p.m.-5.30 p.m.

Answer THREE questions out of FIVE. All questions carry equal marks.

Time: THREE hours.

*The marks given in brackets are **indicative** of the weight given to each part of the question.*

1. Two sisters own Herbal Remedies Inc, a company that advertises and sells herbal remedies. Customers use the postal services to order products advertised by Herbal Remedies Inc in newspapers and magazines. The products are paid for by cheque or debit/credit card and sent to the customer, together with a product catalogue. The business has grown rapidly over the past two years and recently the sisters have recruited five full time staff to assist with the growing clerical workload. Although the product catalogue is maintained using desktop publishing software, no other computing facilities are employed by the company.

One sister wishes to change fundamentally the business processes by advertising and selling products via the Internet. The other sister strongly disagrees; as well as being unclear how any Internet system would operate, she is concerned about data security and the legal aspects of using computer technology.

As an IT consultant you have been engaged to write a report to:

- a) Describe how Internet and back-office systems could be used to advertise and process Herbal Remedies Inc's orders and stimulate further business. **(12 marks)**
 - b) Discuss the security threats associated with such systems and the countermeasures that should be employed. **(7 marks)**
 - c) With reference to the use of Internet and back office systems, outline the contents of two legislative requirements with which Herbal Remedies Inc would need to comply. **(6 marks)**
2. You have been recruited as the MIS manager for a life insurance company where the Chief Executive Officer (CEO) has two concerns: first, the capabilities of the company's policy administration legacy system need to be improved and advice is needed regarding the range of options available; second, since the introduction of a new network, there has been a steady growth in the number of end user systems and the CEO feels that some guidance is essential.

Write a memorandum to the CEO to:

- a) Describe six possible options the company has for improving the capabilities of its legacy systems. Include in your answer the advantages and disadvantages of each option. **(15 marks)**
- b) Discuss the prerequisites of successful end-user computing and comment on how the success of such systems could be measured. **(10 marks)**

Turn over]

3. For each of the following scenarios, recommend an overall approach, together with suitable techniques and tools, that you would use to develop the proposed MIS. Justify your choice of development approach, techniques and tools in each case, and state any assumptions you make within your answer.
- a) A manager wants an individual Decision Support System (DSS) to aid his management decision making but has very little idea of what support the DSS should provide. Any development of the DSS should occur only when there is sufficient justification in terms of costs and benefits. **(9 marks)**
 - b) An MIS is required to support the needs of several investment managers with respect to financial investment decisions. Users range from those that are fairly novice, to those that are highly proficient, with computers. Each user has a very clear view of his/her own support requirements, but only a subset of the total user requirements can be satisfied. Therefore, a consensus needs to be formed as to what are the most important requirements to implement. **(8 marks)**
 - c) An organisation requires an MIS that will automate the provision of the company's many standard management reports. A large database will need to be developed to store the data required for the MIS reports. **(8 marks)**
4. Modern businesses are choosing to build data warehouses and/or data marts and use OLAP (either Relational OLAP or Multi-dimensional OLAP) tools to access information regarding the organisation and its environment. However, building a data warehouse is not an easy task, with the data population (also referred to as the Extract-Transform-Load (ETL)) process being one of the most frequently cited reasons for delays in, or cancellation of, a data warehousing project.

Within the context of the above statement, explain, with supporting illustrative examples, what is meant by each of the following terms or phrases:

- a) Data warehouse **(5 marks)**
 - b) Data mart **(5 marks)**
 - c) Multi-dimensional data **(5 marks)**
 - d) An On-Line Analytical Processing (OLAP) tool **(5 marks)**
 - e) Data population **(5 marks)**
5. a) Describe the key characteristics of the information that is typically required by senior management, comparing it to that required by tactical and operational management. **(10 marks)**
- b) Evaluate, with supporting examples, the extent to which Executive Information Systems (EISs) and Executive Support Systems (ESSs) can satisfy the information requirements of senior management. **(15 marks)**