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THE BRITISH COMPUTER SOCIETY

The BCS PROFESSIONAL EXAMINATION

Advanced Diploma

NETWORK INFORMATION SYSTEMS

17th April 2000 – 2.30pm-5.30pm

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

Time: THREE hours.

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

1. A government department occupies two sites, A and B, about a two kilometres apart. The two sites are connected by a 10Mbit link. A large database server is located at site A and serves several heavily used administrative systems, with about 200 clients at site A and about 50 clients at site B. Staff at site B use the system much more intensively than staff at site A.

At certain times of the day, the performance experienced by users of the clients becomes very poor for no obvious reason.

Discuss the steps you might take to identify the reasons for the degradation in performance and to decide how best to remedy the situation. **(25 marks)**

2. Your company is about to market a CD-ROM containing a database with details of a very large number of British business. You claim that it is both much more comprehensive and much more accurate than any competing products. It will be updated monthly.

Identify the main issues that will need to be addressed in the licence agreement and discuss the merits of the possible approaches to these issues. **(25 marks)**

3. Two life assurance companies, one in Britain and one in the USA, have recently merged. Both companies have network infrastructures that were installed in the late 1980s. The lack of compatibility between the two networks is causing difficulties and it is also apparent that both networks are out of date.

Write a proposal for a modern WAN infrastructure for the new company. Your proposal should include a brief explanation of the architecture proposed and a description of how it would handle various user activities, as well as a brief SWOT analysis. **(25 marks)**

4. The Minister of Justice in the republic of Pontevedro has recently been made aware of the potential of electronic commerce and is enthusiastic about the possibility of applying similar techniques in the legal system.

Write a memorandum to the Minister explaining the problems of authentication that might arise and discussing briefly the extent to which these problems can be overcome. **(25 marks)**

5. Keeping track of the network resources in large organisation is a challenging task.

- a) From the point of view of a network administrator, critically evaluate the tools that are currently available to assist in this task. **(15 marks)**
- b) Suggest alternative approaches to the problem, explaining briefly how they would work. **(10 marks)**