1997 Paper 5 Question 8

Databases

Describe the *ANSI/SPARC architecture* for database management, and show how its use contributes to the enforcement of *data independence*. [6 marks]

Explain briefly the terms *entity*, *attribute*, *relationship*. [3 marks]

Both *network* and *relational* Database Management Systems provide Data Definition Languages so that a conceptual model can be expressed as a formal database schema. Explain the ways in which the primitives supplied for data representation differ between the two models. Illustrate your answer by considering the following database scenario:

> The employees of a company are grouped into a number of departments. Each department has its own director, who is not necessarily a member of that department. Independently, many employees are assigned a manager who is responsible for their career development.

[Any assumptions that you make about the nature of the data should be stated explicitly.] [11 marks]