

## 1994 Paper 8 Question 9

### Database Topics

Explain what is meant by saying that persistence of data is orthogonal to the syntax and semantics of the programming language PS-ALGOL. What criteria determine which data items will persist after a program has terminated? [8 marks]

In order to support database applications the PS-ALGOL run-time system handles transactions. Describe the relevant run-time system routines, and explain how serialisability is guaranteed. [6 marks]

How does the Persistent Object Management System ensure atomicity of database update? [6 marks]