

2000 Paper 7 Question 13

Additional Topics

Name *three* of the diagrammatic models included in the Unified Modeling Language (UML). For *each one* of the three models, repeat the following steps:

- (a) Describe some benefit that this model can bring to a particular stage of a specification and design project.
- (b) Describe how information in this model would be obtained (it may come from another UML model).
- (c) Draw a simple example diagram illustrating the most important features of this model. Your example diagrams can illustrate a familiar system such as an automatic teller machine or vending machine. A complete design is not necessary.

[10 marks]

Describe *two* attributes of an object-oriented design that can be used to assess its quality for purposes of maintenance and software reuse. Describe how you would recognise UML diagrams (or make rough sketches to show what they would look like), contrasting a good design with a bad design for each attribute. [6 marks]

Give an example of a typical programming problem in C++ that can be anticipated at the design stage with the assistance of behavioural models. [4 marks]