SPECIMEN MATERIAL

A-level
COMPUTER SCIENCE

Paper 1

Additional Questions

IMPORTANT NOTES

These questions focus primarily on topics that were not covered by the AQA AS and A-level Computing specifications, introduced in 2009. It is hoped that teachers will find questions on these new topics to be particularly useful.

Many example questions on topics that are common to the new and old specifications can be found on past papers for COMP1, 2 and 3 on our website. Past papers that are more than three years old can be accessed via e-AQA.

This document contains additional questions; it is not intended to be treated as a complete paper. The questions do not provide balance coverage of the specification or the assessment objectives in the same way that a fully live paper would do.

7517A/B/C/D/E

0 3 Three different types of relationship that can exist between objects in object-orientated programming are **association aggregation**, **composition aggregation** and **inheritance**.

0 3 . 1 State **one** reason why many programmers follow the design principle "favour composition over inheritance".

[1 mark]

An object-oriented program is being written to store details about clients at an estate agency. Clients can be either sellers or prospective buyers.

A class `Client` has been created and two subclasses, `Seller` and `Buyer` are to be developed. A `Location` class has been created to store details about an address (eg postcode and street name)

The `Client` class has data fields `Name`, `Address` and `DOB`.

Part of the class definition for `Client` class is:

```
Client = Class {
  Private:
    Name: String
    Address: Location
    DOB: Date
  Public:
    Function GetName
    Function GetDOB
    Function GetAddress
    Procedure SetDetails
}
```

A `Buyer` has the following additional data fields:

- `NoOfBedroomsRequired`: stores the minimum number of bedrooms that the buyer requires in the house they purchase.
- `OffStreetParking`: stores a value indicating if the buyer requires off-street parking or not.
- `AreaDesired`: the name of the town/village/estate that the buyer is looking to purchase a house in.

0 3 . 2 Write the class definition for `Buyer`.

[4 marks]

0 3 . 3 Describe the relationships **association aggregation** and **composition aggregation**, making it clear what the difference between the two is.

[2 marks]

0 3 . 4 Explain how the `Client` class uses association aggregation and why it was considered more appropriate to use this type of relationship than composition aggregation.

[2 marks]