BCS Higher Education Qualification

Diploma

October 2025

EXAMINERS' REPORT

Object Oriented Programming

Questions Report:

A1	This question was attempted by three quarters of the candidates, with more than half passing. Part a) looked at the two main parts of a class and had the scope for the candidate to achieve high marks. In some cases, the answer just repeated the "also known as" components seen in the question, with little extra information or examples to back up the points made, so gained little credit. For Part b) some candidates mixed the two concepts up, or could describe the state of an object, but did not attempt what the scope was. In some cases, the candidate mixed up the object scope with access specifiers. For Part c) some candidates mixed up accessors (getters) with mutators (setters), however, most could describe what a constructor was. Marks were lost for all three by not always including an appropriate example.
A2	This was a less popular question, though had a high pass rate. Part a) was generally answered well, marks were mostly lost for not providing sufficient reasons. For Part b) some answers described testing as an approach for refactoring. Whilst this is important to ensure any changes do not introduce bugs, some examples of what should be done first needed to be included. Sometimes the five SOLID principles were described, but weaker answers did not elaborate on how they would help with refactoring. Most candidates could provide two potential risks for Part c), marks were generally lost for not providing strategies for minimising these risks or did not provide enough information on the risk.
A3	This was a popular question, with more than half passing it. For Part a) most candidates could describe what an is-a inter-class relationship was, though some mixed up the has-a and part-of relationships. Similarly, some mixed up the aggregation and composition relationships. Marks were also lost by assuming all the relationships mentioned were

	types of inheritance, such as associating multiple inheritance with the part-of relationship.

A number of candidates produced good code for Part b) gaining full marks. Marks were often lost for showing an example of inheritance again for the has-a relationship, or not attempting it at all. In some cases, marks were lost by candidates who described a scenario, rather than producing code, which was required. |
| B4 | This question was attempted by all candidates, of which 75% scored a pass mark.

For the explanations requested in Part a), some candidates seemed to be unfamiliar with the concept of untyped and typed languages. Others mistook the concept of the Abstract Data Type for abstract classes.

In Part b), most candidates were able to identify some advantages of Object Oriented Programming, but fewer were able to identify convincing disadvantages (relative to other paradigms). |
| B5 | This question was attempted by 57% of candidates, for which 56% achieved a pass mark.

A number of candidates did not seem to have studied Design Patterns, and answers for Part a) sometimes referred to the different diagrams available in UML.

For those that were familiar with Design Patterns, most were able to describe and identify appropriate use cases for the examples in Part b). |
| B6 | This question was attempted by only 39% of candidates, of which only 36% achieved a pass mark.

Marks in Part a) were lost by not providing code that implemented the class diagram provided or the methods described. For instance, failing to allocate member visibility levels, failing to realise that one of the members was static, or failing to evaluate weight appropriately and return a Boolean in the getIdealWeight() method.

In Part b) there was a tendency to provide irrelevant information, rather than focus on testing specifically. Satisfactory answers referred to concepts like unit, integration and acceptance testing, and some referred to black and white box testing methods in more detail, highlighting the differences between them. In some cases, it was not clearly articulated where in the development process the kind of testing being described should be applied, which was requested in the question. |