

4 Object-Oriented Programming (rkh23)

- (a) State the Open-Closed Principle and explain how it reduces the risk of regressions as software evolves [2 marks]
- (b) Identify the four key principles of Object Oriented Programming and explain how each supports the open-closed principle [8 marks]
- (c) Consider the Java method below. For each of the method bodies given, state whether they will compile and explain your reasoning.

```
public void wildcardMethod(List<? extends Number> numList,  
                           List<? Super Integer> intList)  
{  
    // Method body here  
}
```

- (i) `int sum = 0; for (Number n : numList) sum += n.intValue();` [2 marks]
- (ii) `numList.add(6);` [2 marks]
- (iii) `intList.add(6);` [2 marks]
- (iv) `intList.add((Number)6);` [2 marks]
- (v) `Integer i = intList.get(0);` [2 marks]