# Homework 1 Basic concepts of OOP

1. (a) Explain the difference between a class and an object. [2]

 (b) **Encapsulation** is a fundamental principle of OOP.

 Explain what is meant by encapsulation. [2]

2. A program is to store and update details for many bank accounts.

 (a) (i) What class would be used in this program? [1]

 (ii) Give an example of an object in this class. [1]

 (b) For the class given in (a)(i), list

 (i) three possible attributes. [3]

 (ii) two possible methods. [2]

3. An object-oriented program is to be used to store and display details of members of a sports club.

 A member class is defined which holds attributes surname, first name, annual membership fee, and methods to amend and display these details.

 An incomplete definition of the Member class is given below.

 (a) Add statements to complete procedure **constructor**, where indicated. [2]

 class Member

 private surname

 private firstname

 private annualFee

 public constructor(mySurname, myFirstName, myAnnualFee)

 **(complete procedure here)**

 *(other procedures – do not complete)*

endclass

(b) What is the purpose of a constructor? [1]

 (c) Write a statement to instantiate a member called Harry Mason, annual fee £25.00. [2]

 (d) Write a method which will amend the annual fee of a member. [2]

 (e) Write a statement to amend the annual fee of member Harry Mason to £30.00. [2]

 [Total 20 Marks]