

3.3 Anatomy of a Class

Name: _____ Class: _____ Date: _____

Total: 9 marks**KEY WORDS** class 类 • constructor 构造函数 • instance variables 实例变量 • encapsulation 封装

Objective

Build the skills to answer exam questions on **the anatomy of a class**.

You must be able to:

- identify the parts of a **class** 类: instance variables, constructors, and methods
- declare **instance variables** 实例变量 to hold each object's state
- use **private** and **public** to control **encapsulation** 封装

1 Worked examples

Study these first. Each one shows the method for a question type used later.

■ Parts of a class

- **Instance variables** — hold the object's **state** (data).
- **Constructors** — set up a new object.
- **Methods** — the object's behaviour.

■ Encapsulation

Declaring instance variables **private** **hides** them, so they can only be changed through **public** methods — this is **encapsulation**, which protects an object's data.

2 Practice

2.1 Name the three parts of a class.

[2]

2.2 State what instance variables hold.

[1]

2.3 State the access modifier used to hide data.

[1]

3 Exam-style questions

3.1 The state of an object is held in its

[1]

A	B
C	D

- A** methods
- B** instance variables
- C** constructors
- D** comments

3.2 To hide a class's data, declare it

[1]

A	B
C	D

- A** `public`
- B** `private`
- C** `static`
- D** `void`

3.3 A `BankAccount` class stores a balance.

(a) Name what the balance is (which part of the class).

[1]

(b) State the modifier to keep it hidden.

[1]

(c) Name the idea of hiding data behind methods.

[1]