AP COMPUTER SCIENCE A • EXERCISE SHEET

2.3 if Statements

Name: _____ Class: _____ Date: _____ **Total: 8 marks**

Objective

Build the skills to answer exam questions on **if statements**.

You must be able to:

- write an **if statement** 条件语句 that runs code only when a condition is `true`
- add an **else** clause for when the condition is `false`
- understand how a conditional changes the **flow of control** 控制流

1 Worked examples

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

■ if and else

```
if (score >= 60) {
    System.out.println("pass");
} else {
    System.out.println("fail");
}
```

The `if` block runs only when the condition is `true`; the `else` block runs when it is `false`.

■ Flow of control

A conditional changes **which statements run**, letting the program make decisions.

2 Practice

2.1 State what an if statement does. [1]

2.2 State what an else clause does. [1]

2.3 For `if (n > 0) print "positive"; else print "not positive";`, state the out-

put when `n` is -3. [1]

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3 Exam-style questions

3.1 An if statement runs its block when the condition is [1]

- **A** `false`
- **B** `true`
- **C** `null`
- **D** `0`

3.2 An else clause runs when the condition is [1]

- **A** `true`
- **B** `false`
- **C** missing
- **D** positive

3.3 `if (t >= 100) print "boiling"; else print "not boiling";`.

(a) State the output when `t` is 100. [1]

(b) State the output when `t` is 50. [1]

(c) Name what an if statement changes. [1]

4 Go further

- work through the **2.3 if Statements** lesson on the **Learn** page;
- read the **Boolean Expressions and if Statements** section of the AP Computer Science A handout on the **Know** page.

Solutions

2.1 it runs a block of code only when its condition is `true`.

2.2 it runs alternative code when the condition is `false`.

2.3 `not positive`.

3.1 B.

3.2 B.

3.3 (a) `boiling`. (b) `not boiling`. (c) the flow of control.