MODULE O ROBUST PROGRAMS · O6

Syntax errors vs logic errors

Original practice questions · 22 marks · ~25 minutes · OCR J277 specification 2.3.2 (with 2.1.2)

Name _____ Date _____

Instructions. Answer all questions in the spaces provided. The marks for each part are shown in brackets [ ]. Where you write a corrected line of code, you may use OCR Exam Reference Language or a high-level programming language that you have studied. The total for this worksheet is **22 marks**.

1

Total: 4 marks

(a) Describe what is meant by a **syntax error**. **[2]**

(b) Describe what is meant by a **logic error**. **[2]**

2

Total: 4 marks

A café is writing a program for its loyalty cards. Each line of code below contains **one** error.

(a) Tick (✓) **one** box in each row to show whether the error is a syntax error or a logic error. **[4]**

What the line should do	Line of code	Syntax error	Logic error
Output the message Card full	`print("Card full"`		
Work out a 20% discount on the price	`discount = price * 0.02`		
Check whether the customer has 10 or more stamps	`if stamps > 10 then`		
End the if statement	`endfi`		

3 **Total: 4 marks**

A bike-hire shop charges £8 for each hour a bike is hired. A programmer writes a program to work out the cost of a hire.

(a) When the programmer first tries to run the program, the translator reports an error on line 12 and the program does not run. **[1]**
State the type of error this shows.

(b) After this error is corrected, the program runs. A customer who hires a bike for 2 hours is charged £24. **[1]**
State the type of error this shows.

(c) Describe how the programmer could find the cause of the error in part (b). **[2]**

4 **Total: 5 marks**

A laundrette charges £2 for each kilogram (kg) of washing, with a **minimum** charge of £6. Any charge below £6 is raised to £6. Weights are entered in whole kilograms.
The program below contains **one** syntax error and **one** logic error.

```
01 kg = int(input("Enter weight of washing in kg"))
02 charge = kg * 2
03 if charge > 6 then
04     charge = 6
05 endif
06 print("Charge: " + str(charge) + " pounds"
```

(a) Identify the line number of the **syntax** error and write the corrected line. **[2]**

Line number	Corrected line

(b) Identify the line number of the **logic** error and write the corrected line. **[2]**

Line number	Corrected line

(c) The programmer corrects **only** the syntax error. State the output when the weight **5** is entered. **[1]**

5 **Total: 5 marks**

An office air-quality monitor takes three readings. The program below should input the three readings and output their average (mean).

```
01 total = 0
02 for i = 1 to 3
03     reading = int(input("Enter reading"))
04     total = total + i
05 next i
06 average = total / 3
07 print(average)
```

(a) Complete the trace table when the readings **12**, **9** and **15** are entered, in that order. You may not need to use all the rows. **[3]**

i	reading	total	average	Output

(b) The program contains a logic error. Identify the line number of the logic error and write the corrected line. **[2]**

Total for this worksheet: 22 marks