MODULE M PROGRAMMING · M21

File handling: open, read, write and close

Original practice questions · 20 marks · ~25 minutes · Cambridge 0478 syllabus 8.3.1, 8.3.2

Name _____ Date _____

Instructions. Answer all questions in the spaces provided. The marks for each part are shown in brackets [ ]. The total for this worksheet is **20 marks**. Pseudocode on this sheet follows the Cambridge 0478 pseudocode guide.

1

Total: 2 marks

A ferry company's ticket machine counts the tickets it sells. While the program is running, the count is held in the variable `TicketsSold`. When the machine is switched off at night, the program also writes the count to a text file.

Explain why the program stores the count in a text file as well as in the variable. **[2]**

2

Total: 4 marks

Tick (✓) **one** box in each row to show whether each statement about Cambridge pseudocode file handling is true or false. **[4]**

Statement	True	False
`OPENFILE "Stock.txt" FOR WRITE` adds new data after the data already stored in `Stock.txt`		
A file should be opened in only one mode at a time		
`READFILE "Stock.txt", Item` reads a data item from `Stock.txt` and assigns it to the variable `Item`		
`CLOSEFILE "Stock.txt"` deletes the file `Stock.txt`		

3

Total: 4 marks

A rain gauge saves three rainfall readings, in millimetres, in the text file `Rainfall.txt`. The file holds one reading on each line: `12`, then `0`, then `7`.

```
01 DECLARE Reading : INTEGER
02 DECLARE Total : INTEGER
03 DECLARE Count : INTEGER
04 Total ← 0
05 OPENFILE "Rainfall.txt" FOR READ
06 FOR Count ← 1 TO 3
07     READFILE "Rainfall.txt", Reading
08     Total ← Total + Reading
09 NEXT Count
10 CLOSEFILE "Rainfall.txt"
11 OUTPUT "Total rainfall: ", Total
```

(a) Write down the output from line 11. **[1]**

(b) State the file mode used in line 05. **[1]**

(c) These lines are added to the end of the algorithm.

```
12 OPENFILE "Rainfall.txt" FOR WRITE
13 WRITEFILE "Rainfall.txt", Total
14 CLOSEFILE "Rainfall.txt"
```

Describe what `Rainfall.txt` contains after line 14 has been run. Explain why. **[2]**

4 **Total: 4 marks**

A walking club keeps the name of its newest member in the text file `Members.txt`. Only the newest name needs to be kept. This algorithm should input the name and store it in the file, then close the file.

```
01 DECLARE NewName : STRING
02 OUTPUT "Enter the name of the new member"
03 INPUT NewName
04 OPENFILE "Members.txt" FOR READ
05 WRITEFILE NewName, "Members.txt"
06 CLOSEFILE "Members.txt"
```

Identify the line numbers of the **two** errors in the algorithm and suggest a correction for each error. **[4]**

Line number	Correction

5 **Total: 6 marks**

A workshop keeps a list of its tools in the text file `Tools.txt`. The file holds exactly five lines of text, one tool on each line. The workshop wants a copy of the list in a second text file, `Backup.txt`.

Write an algorithm using pseudocode to: **[6]**

- declare any variables you use
- read the five lines of text from `Tools.txt`, one line at a time
- write each line of text to `Backup.txt`
- close both files when they are no longer needed
- output a message to say that the copy is complete.

Total for this worksheet: 20 marks