

## **MARK SCHEME for the October/November 2013 series**

### **9691 COMPUTING**

**9691/22**

Paper 2 (Written Paper), maximum raw mark 75

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

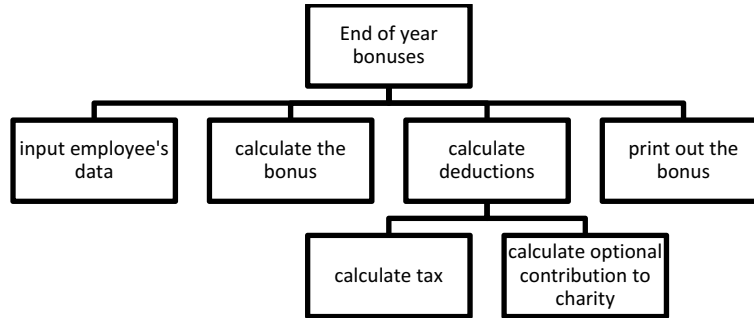
Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the October/November 2013 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

|        |  |          |       |
|--------|--|----------|-------|
| Page 2 | Mark Scheme                            | Syllabus | Paper |
|        | GCE AS/A LEVEL – October/November 2013 | 9691     | 22    |

1 (a)



1 mark for top level

1 mark for 4 boxes at 2<sup>nd</sup> level in order incl. a verb

1 mark for 2 boxes below 'calculate deductions'

[3]

(b) Any three points + **good** explanation

[6]

- use of indentation ...
- ... to show structure
- comments/annotation ...
- ... to know what each line/block is doing // to help understanding of this line/section/block
- meaningful variable names ...
- ... to convey the purpose of the variable
- capital keywords/reserved words // capitalised identifiers
- ... to make these words stand out

(c) (i) – local variables  
– only have scope in the module they are declared in

[2]

(ii) – parameters  
– pass/return values/parameters into a module

[2]

(d) Value + reason (different reasons within each type) × 5

[5]

|               |   |                 |              |
|---------------|---|-----------------|--------------|
| <b>Page 3</b> | <b>Mark Scheme</b>                            | <b>Syllabus</b> | <b>Paper</b> |
|               | <b>GCE AS/A LEVEL – October/November 2013</b> | <b>9691</b>     | <b>22</b>    |

2 (a) mark as follows:

1 mark for declaration

1 mark for size (at least 150 × 2)

1 mark for type specification

[3]

(b) (i) – to ensure that known values are stored

// no rogue values found later

// to identify unused locations

[1]

(ii) mark the structure as follows:

1 mark for 2 FOR loops or equivalent

1 mark for working through all the array

1 mark for initialising an array element with a sensible value (e.g. empty string, NULL)

(must give 2 indices)

[3]

(c) Any three points from:

– declare a record type // description of a record

– declare a file type

– create a new file of this file type

– repeatedly assign data from array to record

– save the record to file

– close file

– open and read file

[3]

2 (d)

| Identifier | Description   | Data type                            | Field size (Bytes) |
|------------|---|--------------------------------------|--------------------|
| EbookID    | a unique ebook ID, a whole number between 1 and 500 | INTEGER                              | 2–9                |
| BookTitle  | the title of the ebook                              | STRING                               | 20–50              |
| Author     | the author of the ebook                             | STRING                               | 10–30              |
| DateBought | date bought   | DATE/DateTime<br>/STRING<br>/INTEGER | 6–12               |
| Cost       | price paid  | CURRENCY<br>/REAL/FLOAT              | 5–8                |
| Fiction    | fiction or non-fiction                              | BOOLEAN                              | 1                  |

[8]

|               |   |                 |              |
|---------------|---|-----------------|--------------|
| <b>Page 4</b> | <b>Mark Scheme</b>                            | <b>Syllabus</b> | <b>Paper</b> |
|               | <b>GCE AS/A LEVEL – October/November 2013</b> | <b>9691</b>     | <b>22</b>    |

3 (a) Any five from:

- prompt
- space for password entry
- indication of number of attempts
- space for successful/unsuccessful message
- button/similar to cancel process
- uses space available

[5]

3 (b) (i)

| Attempt | Password | Password = "Aisha" | Attempt > 3  | Password = "Aisha" OR Attempt > 3 | Output                  |
|---------|----------|--------------------|--------------|-----------------------------------|-------------------------|
| 0       |          |                    |              |                                   |                         |
|         | Aisha    |                    |              |                                   |                         |
| 1       |          |                    |              |                                   |                         |
|         |          | <b>True`</b>       |              |                                   |                         |
|         |          |                    | <b>False</b> |                                   |                         |
|         |          |                    |              | <b>True</b>                       |                         |
|         |          |                    |              |                                   | <b>Password correct</b> |

1 mark

1 mark

1 mark

[3]



| Page 6 | Mark Scheme                            | Syllabus | Paper |
|--------|--|----------|-------|
|        | GCE AS/A LEVEL – October/November 2013 | 9691     | 22    |

- 3 (c) (i) Logic error [1]
- (ii) – until password = "Aisha" OR attempt = 3  
// until password = "Aisha" OR attempt >= 3  
// until password = "Aisha" OR attempt > 2 [1]
- (d) Too obvious/simple //easy to guess // easily hacked  
// *comparable reason* [1]
- (e) – a longer string/password  
– mixture of different character types // letters and numbers  
– random characters // do not use a dictionary word // don't use accessible personal data [2]
- (f) (i) *mark as follows:*
- 1 mark for inputting numerical value*  
*1 mark for validation of input between 1 and 4*  
*1 mark for error message*  
*1 mark for 3 or 4 IF statements*  
*1 mark for correct nesting*  
*1 mark procedure call implementation* [6]
- (ii) *mark as follows:*
- correct opening of CASE/SELECT statement  
correct label  
correct action  
correct end of CASE/SELECT statement [4]

4 (a) (i)

| Line number | x | y   | RETURN       |
|-------------|---|-----|--------------|
| 0           | 8 | 2   |              |
| 5           | 0 | (2) |              |
| 6           |   |     | Divisor(2,0) |
| 0           | 2 | 0   |              |
| 3           |   |     | 2            |
|             |   |     |              |

1 mark for line 5

1 mark for line 6 // second line 0 + line 3

[2]

(ii)

| Line number | x  | y   | RETURN       |
|-------------|----|-----|--------------|
| 0           | 38 | 7   |              |
| 5           | 3  | (7) |              |
| 6           |    |     | Divisor(7,3) |
| 0           | 7  | 3   |              |
| 5           | 1  | (3) |              |
| 6           |    |     | Divisor(3,1) |
| 0           | 3  | 1   |              |
| 5           | 0  | (1) |              |
| 6           |    |     | Divisor(1,0) |
| 0           | 1  | 0   |              |
| 3           |    |     | 1            |

1 mark for 1<sup>st</sup> line 5

1 mark for candidate's 1<sup>st</sup> line 0

1 mark for 2 more line 5s and line 0s

1 mark for output

[4]

|               |   |                 |              |
|---------------|---|-----------------|--------------|
| <b>Page 8</b> | <b>Mark Scheme</b>                            | <b>Syllabus</b> | <b>Paper</b> |
|               | <b>GCE AS/A LEVEL – October/November 2013</b> | <b>9691</b>     | <b>22</b>    |

- 4 (b) (i) (Function) terminating condition [1]
- (ii) The function would never end // infinite loop // stack overflow [1]
- (c) – at the first recursive call // 1<sup>st</sup> time line 6 is reached  
– the call reverses the values of x and y  
– function carries on normally [3]