

**CAMBRIDGE INTERNATIONAL EXAMINATIONS**

**GCE Advanced Subsidiary Level and GCE Advanced Level**

## **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.

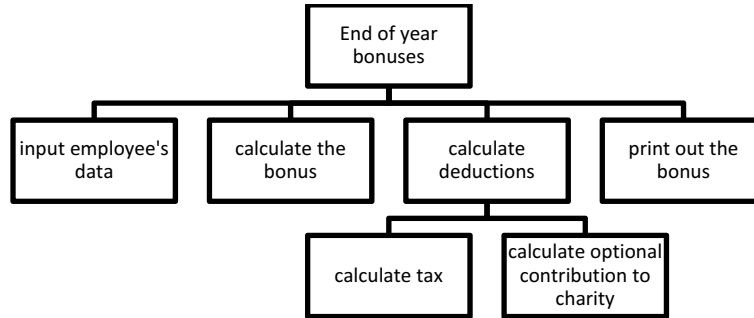
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Page 2	Mark Scheme	Syllabus	Paper
	GCE AS/A LEVEL – October/November 2013	9691	22

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 /STRING /INTEGER	6–12
Cost	price paid	CURRENCY /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]

**3 (b) (ii)**

Attempt	Password	Password = "Aisha"	Attempt > 3	Password = "Aisha" OR Attempt > 3	Output
0					
	<b>aisha</b>				
1					
		<b>False</b>	<b>False</b>	<b>False</b>	
	<b>Asha</b>				
2					
		<b>False</b>	<b>False</b>	<b>False</b>	
	<b>AISHA</b>				
3					
		<b>False</b>	<b>False</b>	<b>False</b>	

1 mark

1 mark

1 mark

1 mark

1 mark

[5]

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]