Cambridge IGCSE

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Cambridge International General Certificate of Secondary Education

COMPUTER SCIENCE	**0478/22**
Paper 2	**May/June 2017**
MARK SCHEME	
Maximum Mark: 50	

Published

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Question	Answer	Marks
1(a)(i)	**One** variable name **MUST** relate to the cost of the outing in Task 1 - Variable name (1) - Data type to match variable (1) - Description of the use of the given variable (1) Many correct answers, they must be meaningful. This is an example only. - `NoSeniorCitizens` (1), integer (1), number of senior citizens that want to go on the outing (1)	**3**
1(a)(ii)	**Two** constants required, for each constant - Name (1) - Value (1) - Use (1) Many correct answers, they must be meaningful. These are examples only. - `MinNoSeniorCitizens` (1), 10 (1), minimum number of senior citizens that can go on the outing (1) - `MaxNoSeniorCitizens` (1), 36 (1), maximum number of senior citizens that can go on the outing (1) Max 6 marks	**6**
1(b)	- calculate cost of carers // if more than 24 senior citizens on the trip cost is 60 otherwise cost is 40 - add to the cost of the outing	**2**

Question	Answer	Marks

1(c)	Any **five** from:
	- loop for number of senior citizens on the trip
	- input with prompts name and amount paid
	- store name and amount paid in appropriate place in arrays
	- total the amount paid
	- check if spare places are available
	- if spare place is required remove a spare place//fill spare places
	- add name(s) to list in appropriate place(s)
	- store names of two carers
	- If number of senior citizens > 24 store name of third carer
	
	                                                   Max 5 marks
	
	Example
	<pre>TotalPaid ← 0
	FOR Counter ← 1 TO NoSenCit
	  PRINT "Please Enter Name"
	  INPUT SenCitName[Counter]
	  PRINT "Please Enter amount paid"
	  INPUT SenCitAmount[Counter]
	  TotalPaid ← TotalPaid + Amount
	NEXT Counter
	Extras ← TRUE
	WHILE NoSenCit < 36 and Extras
	  PRINT "Do you want to add another person? Y/N"
	  INPUT Answer
	  IF Answer = "Y"
	    THEN
	      NoSenCit ← NoSenCit + 1
	      PRINT "Please Enter Name"
	      INPUT SenCitName[NoSenCit]
	    ELSE Extras ← FALSE
	  ENDIF
	ENDWHILE
	PRINT "Please Enter Name of First Carer"
	INPUT Carer1
	PRINT "Please Enter Name of Second Carer"
	INPUT Carer2
	IF NoSenCit > 24
	  THEN
	    PRINT "Please Enter Name of Third Carer"
	    INPUT Carer3
	ENDIF</pre>
		5

1(d)	**Explanation** (any programming statements must be fully explained) - check total cost - ……against total amount paid - if total cost < total amount paid <u>display/show</u> profit - if total cost = total amount paid <u>display/show</u> break even	4

Question	Answer	Marks

2(a)	award full marks for any working solution
	- Input three numbers (1)
	- Attempt to select largest number (1)
	- Working method (1)
	- print out largest number (1)
	
	Sample algorithm
	<pre>INPUT Num1, Num2, Num3
	IF (Num1 > Num2) AND (Num1 > Num3) THEN PRINT Num1
	                ENDIF
	IF (Num2 > Num1) AND (Num2 > Num3) THEN PRINT Num2
	                ENDIF
	IF (Num3 > Num1) AND (Num3 > Num2) THEN PRINT Num3
	                ENDIF</pre>or
	
	<pre>INPUT Num1
	Big ⟵ Num1
	INPUT Num2, Num3
	IF Num2 > Big THEN Big ⟵ Num2 ENDIF
	IF Num3 > Big THEN Big ⟵ Num3 ENDIF
	PRINT Big</pre>
		4

2(b)	1 mark for each data set and 1 mark for the matching reason. There are many possible correct answers, these are examples only. *Test data set 1:* 30, 29, 28 *Reason:* first number is the largest Test data set 2: x, y, z Reason: abnormal data, should be rejected Max 4 marks	**4**

Question	Answer				Marks
3	**Weight**	**Reject**	**Total Weight**	**OUTPUT**	**5**
		0	0		
	13		13		
	17		30		
	26	1			
	25		55		
	5		60		
	10		70		
	15		85		
	35	2			
	20		105		
			85	Weight of items 85 Number of items rejected 2	
	(1mark)	(1 mark)	(1 mark to 1st 85) (1 mark 105, 85)	(1 mark)	

Question	Answer	Marks
4(a)	Error - `Count ← 0` Correction - `Count ← 1` or Error - `UNTIL Count > 100` Correction - `UNTIL Count >= 100` **or** `UNTIL Count = 100` or `UNTIL Count > 99`	**2**

4(b)	- use of `FOR` with correct start and end values …
	- … use of `NEXT`
	- … removal of increment for `Count`
	
	Sample algorithm
	         `Sum ← 0`
	         `FOR Count ← 1 TO 100`
	           `INPUT Number`
	           `Sum ← Sum + Number`
	         `NEXT // NEXT Count`
	       `PRINT Sum`
		3

5(a)	for each field name (1), data type and sample (1) The following are examples there are many different correct answers. - EarTag (1), text, EAR1011 (1) - DOB (1), date, 4/3/2017 (1) - Gender (1), text, M (1) - Weight (1), number, 5.9 (1)	**8**

Question	Answer	Marks
5(b)	EarTag	**1**
5(c)	<table><tr><td>Field:</td><td>EarTag</td><td>Gender</td><td>Weight</td><td></td></tr><tr><td>Table:</td><td>SHEEP</td><td>SHEEP</td><td>SHEEP</td><td></td></tr><tr><td>Sort:</td><td></td><td></td><td></td><td></td></tr><tr><td>Show:</td><td>☑</td><td>☐</td><td>☐</td><td>☐</td></tr><tr><td>Criteria:</td><td></td><td>='M'</td><td>> 10</td><td></td></tr><tr><td>or:</td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>(1 mark)</td><td>(1 mark)</td><td>(1 mark)</td><td></td></tr></table>	**3**