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Cambridge Ordinary Level

COMPUTER SCIENCE

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Paper 2

May/June 2017

MARK SCHEME

Maximum Mark: 50

Published

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This document consists of **6** printed pages.

Question	Answer	Marks
1(a)(i)	<p>One variable name MUST relate to the cost of the outing in Task 1</p> <ul style="list-style-type: none"> - Variable name (1) - Data type to match variable (1) - Description of the use of the given variable (1) <p>Many correct answers, they must be meaningful. This is an example only.</p> <ul style="list-style-type: none"> - <code>NoSeniorCitizens</code> (1), integer (1), number of senior citizens that want to go on the outing (1) 	3
1(a)(ii)	<p>Two constants required, for each constant</p> <ul style="list-style-type: none"> - Name (1) - Value (1) - Use (1) <p>Many correct answers, they must be meaningful. These are examples only.</p> <ul style="list-style-type: none"> - <code>MinNoSeniorCitizens</code> (1), 10 (1), minimum number of senior citizens that can go on the outing (1) - <code>MaxNoSeniorCitizens</code> (1), 36 (1), maximum number of senior citizens that can go on the outing (1) <p style="text-align: right;">Max 6 marks</p>	6
1(b)	<ul style="list-style-type: none"> - 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)	<p>Any five from:</p> <ul style="list-style-type: none"> - 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 <p style="text-align: right;">Max 5 marks</p> <p>Example</p> <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)	<p>Explanation (any programming statements must be fully explained)</p> <ul style="list-style-type: none"> - 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)	<p>award full marks for any working solution</p> <ul style="list-style-type: none"> - Input three numbers (1) - Attempt to select largest number (1) - Working method (1) - print out largest number (1) <p>Sample algorithm</p> <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> <p>or</p> <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)	<p>1 mark for each data set and 1 mark for the matching reason.</p> <p>There are many possible correct answers, these are examples only.</p> <p><i>Test data set 1:</i> 30, 29, 28 <i>Reason:</i> first number is the largest</p> <p><i>Test data set 2:</i> x, y, z <i>Reason:</i> abnormal data, should be rejected</p> <p style="text-align: right;">Max 4 marks</p>	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)	<ul style="list-style-type: none"> - 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. <ul style="list-style-type: none"> - 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)	Field:	EarTag	Gender	Weight	3
	Table:	SHEEP	SHEEP	SHEEP	
	Sort:				
	Show:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Criteria:		='M'	> 10	
	or:				
		(1 mark)	(1 mark)	(1 mark)	