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Cambridge International General Certificate of Secondary Education

COMPUTER SCIENCE

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Paper 2

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MARK SCHEME

Maximum Mark: 50

Published

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This document consists of **7** printed pages.

Question	Answer	Marks
1(a)(i)	1 mark per bullet: • At least one array declaration • At least one array has an appropriate name • All arrays with appropriate names Many correct answers, they must be meaningful. These are examples only. <pre>Array_2Seater[] Array_4Seater[] Array_Historic[]</pre>	3
1(a)(ii)	1 mark per bullet: • Name of variable • Purpose of variable • Name of constant • Purpose of constant Many correct answers, they must be meaningful. These are examples only. Variable NumFlights to store the number of flights in a day Constant FlightCost2Seat30 to store the cost of a 30 minute flight in a 2 seater plane	4

Question	Answer	Marks
1(b)	Any five from: - Prompt for plane - Input plane - Prompt for another input length of flight along with the input. - Attempt at calculation of maximum number of flights in a day - Using correct values for maximum number of flights (from calculation or otherwise) - Calculation/determination of cost of a single flight for selected plane and duration - Calculation of income that can be generated for one combination of plane and flight - Output of total possible income for one combination of plane and flight with message(s) Algorithm example: <pre> OUTPUT "Please Enter Type of Plane" OUTPUT "1: 2 Seater" OUTPUT "2: 4 Seater" OUTPUT "3: Historic" INPUT PlaneType OUTPUT "Please Enter Length of Flight" INPUT FlightLength CASE OF FlightLength 30: OUTPUT "Maximum number of flights is 10" 60: OUTPUT "Maximum number of flights is 6" OTHERWISE OUTPUT "Invalid length of flight" ENDCASE CASE OF PlaneType 1: Price30 ← 100; Price60 ← 150 2: Price30 ← 120; Price60 ← 200 3: Price30 ← 120; Price60 ← 500 OTHERWISE OUTPUT "Invalid type of plane" ENDCASE CASE OF FlightLength 30: OUTPUT "Total Possible Income is ", Price30 * 10 60: OUTPUT "Total Possible Income is ", Price60 * 6 ENDCASE </pre>	5
1(c)	1 mark for each correct point related to the inputs for Task 1 - Description of how the program would validate the input - Description/identification of input(s) - Type of validation check - Checking inputs against stored data/maxima/correct data - Dry-running the program - Use of test data - Identification of types of test data - Example(s) of test data	4

Question	Answer	Marks
1(d)	Any four from: • Input timeslot • Check 3 types of plane • Methodology for checking time slot • Identify any planes available • Output plane(s) available • Output if no planes available	4

Question	Answer	Marks
2	1 mark for each error identified plus suggested correction (the corrected lines must be written in full) Line 4 correct line WHILE Number <= 99 OR Number > 1000 Line 7 correct line Num[Index] = Number Line 9 correct line NEXT (Index) Line 10 correct line PRINT Count	4

Question	Answer	Marks
3(a)	1 mark per bullet: • Validation checks whether data to be entered is possible/sensible // computer check • Verification checks that data entered is the data that was intended to be entered // can be a human check // matches the source	2
3(b)	1 mark for each valid point Either • Double Entry // suitable practical example • the data will be entered twice • compared by the computer or by a human • if a discrepancy is found, the data entry operator is asked to re-enter the data Or • Visual Verification // suitable practical example • the data will be compared to the source 'document' • compared by a human • if a discrepancy is found, the data is re-entered	2

Question	Answer	Marks
3(c)	1 mark for explanation and 1 mark for an expansion - Library routine is a list of instructions // block of code // subroutine ... that is used often which is given a name ... and which can be called from other programs - Library routines make writing programs easier and faster as the code is already written - Library routines make program testing easier as the code has already been tested and debugged	2

Question	Answer	Marks
4(a)	1 mark for each correct line Pseudocode description A loop that will iterate at least once. A conditional statement to deal with many possible outcomes. A loop that will iterate a set number of times. A conditional statement with different outcomes for true and false. Pseudocode statement FOR...TO...NEXT IF...THEN...ELSE...ENDIF WHILE...DO...ENDWHILE CASE...OF...OTHERWISE...ENDCASE REPEAT...UNTIL	4
4(b)	1 mark per bullet: - Appropriate loop controls - Read from array - Print from array (the last two points can be in one statement) Note reading and printing MUST be within the same loop Example algorithm: <pre> Count ← 0 WHILE Count < 50 DO OUTPUT Name[Count] Count ← Count + 1 ENDWHILE </pre>	3

Question	Answer							Marks
5(a)	Flag	Count	Name[1]	Name[2]	Name[3]	Name[4]	Temp	5
			Jamal	Amir	Eve	Tara		
	0	1	Amir	Jamal	Eve	Tara	Jamal	
	1	2	Amir	Jamal	Eve	Tara	Jamal	
	1	3	Amir	Eve	Jamal	Tara	Jamal	
	1	4	Amir	Eve	Jamal	Tara	Jamal	
	0	1	Amir	Eve	Jamal	Tara	Jamal	
	0	2	Amir	Eve	Jamal	Tara	Jamal	
	0	3	Amir	Eve	Jamal	Tara	Jamal	
	0	4	Amir	Eve	Jamal	Tara	Jamal	
	(1 Mark) (1 Mark) (-----1 Mark-----) (-----1 Mark-----) (1 Mark)							
5(b)	1 mark per bullet: • Sorting the names • Ascending order / A to Z / lowest to highest / Alphabetic order							2

Question	Answer	Marks
6(a)	1 mark for any sensible appropriate field name 1 mark for data type, purpose + example data Example 1: Field Name: SPECIESID Data Type: Alphanumeric Purpose: Primary key Example Data: SP06583 Example 2: Field name: NUMBER Data Type: Integer Purpose: To record how many of that species there are at the park Example Data: 30	2

Question	Answer					Marks
6(b)	Field:	Species	Classification	Diet	Legs	4
	Table:	LIVESTOCK	LIVESTOCK	LIVESTOCK	LIVESTOCK	
	Sort:	Ascending/ Descending				
	Show:	☒	☐	☐	☐	
	Criteria:		“Mammal”	“Herbivore”	4	
	or:					
	(1 Mark)	(1 Mark)	(1 Mark)	(1 Mark)		
	1 mark per completely correct column.					