Oxford Revise | OCR Computer Science | Answers

Chapter 22 Iteration (loop structures)

Question	Answer	Extra information	Marks	AO / Specification reference
1	```total = 0 for i = 1 to 100 number = input("Input a positive number") total = total + number next i print("The total is " + total) print("The average is " + total / 100)```	Marking points: • Appropriate loop structure to allow 100 iterations • Input of a number inside the loop • Totalling the numbers inside the loop • Initialising the totalling variable before the loop • Outputting the total after the loop • Calculation and output of average (outside the loop). Note: it is good practise to initialise totalling or counting variables before they are used for the first time. No identifier names have been given in this question so any appropriate names are acceptable.	1 1 1 1 1 1	AO3 2.2.1 2.3.1

Question	Answer	Extra information	Marks	AO / Specification reference

2	`total = 0`
	`number = input("Input a positive number")`
	`while number != -1`
	`    total = total + number`
	`    number = input("Input a positive number")`
	`endwhile`
	`print("The total is " + total)`
	`numbers`
	`print("The average is " + total / 100)`
		Marking points:
		
		• Correct use of condition-controlled loop
		• Testing for an input of -1
		• Input of numbers (pre-condition loop requires the first number to be input before the loop, post-condition loop requires all the inputs to be inside the loop)
		• Totalling the numbers inside the loop (pre-condition loop requires the totalling statement to be before the input, post-condition loop requires it to be after the input)
		• Initialising the totalling variable before the loop and outputting the total after the loop
		
		Calculation and output of average (outside the loop).
			1
			1
			1
			1
			1
			1
				AO3
				
				2.2.1

Question	Answer	Extra information	Marks	AO / Specification reference
3		Marking points: • Start, End, and all boxes connected together • Correct input • Correct decision box and content, with true or false routes identified • Correct output for false input, with path to re-entry of input • Correct output for true input. Note: the output messages are examples. Other messages with the same meaning are also acceptable.	1 1 1 1 1	AO3 2.2.1