Centre No.					Pape	er Refer	ence			Surname	Initial(s)
Candidate No.			6	1	0	3	/	0	2	Signature	

6103/02 (W1) **Edexcel GCE**

Biology

Biology (Human)

Advanced Subsidiary

Unit 3 Paper 02 (W1)

Thursday 17 May 2007 – Afternoon

Time: 1 hour 20 minutes

Materials required for examination	Items included with question paper
Ruler	Nil

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initial(s) and

The paper reference is shown above. Check that you have the correct question paper.

Answer BOTH questions in the spaces provided in this booklet.

Show all the steps in any calculations and state the units. Calculators may be used. Include diagrams in your answers where these are helpful.

Information for Candidates

The marks for individual questions and parts of questions are shown in round brackets: e.g. (2). The total mark for this paper is 32.

Advice to Candidates

You will be assessed on your ability to organise and present information, ideas, descriptions and arguments clearly and logically, taking account of your use of grammar, punctuation and spelling.

N25998A



Turn over



Examiner's use only

Team Leader's use only

Question Number 1

Total

Leave blank

Answer BOTH questions.

Write your answers in the spaces provided.

1. A student decided to carry out an investigation into the effect of acid rain on the shells of snails. Calcium carbonate is a major component of snail shells. Acid rain dissolves calcium carbonate, leaving the soft tissue inside the shell unprotected.

On collecting empty snail shells, the student noticed that the smaller shells were thinner than the larger shells. Therefore, she decided to test the hypothesis that acid rain is more damaging to smaller shells than to larger ones.

She weighed each shell before immersing it in the same volume of 0.4 mol dm⁻³ nitric acid. Each shell was left in the acid for 5 minutes, after which time it was removed, rinsed in water and then weighed again. She repeated this for seven more shells of different mass

A copy of the student's notebook, showing the results of this investigation, is shown below.

Shell number 1	Original mass	0.85 grams	Final mass	0.05 grams
Shell number 2	Original mass	2.04 grams	Final mass	1.26 grams
Shell number 3	Original mass	2.50 grams	Final mass	1.61 grams
Shell number 4	Original mass	1.82 grams	Final mass	1.18 grams
Shell number 5	Original mass	1.02 grams	Final mass	0.21 grams
Shell number 6	Original mass	1.18 grams	Final mass	0.40 grams
Shell number 7	Original mass	1.55 grams	Final mass	0.76 grams
Shell number 8	Original mass	2.30 grams	Final mass	1.47 grams

(a) Prepare a table and present the results in a suitable way so that the **percentage change** in mass of each snail shell can be compared.

(4)

Leave blank (b) Use the data in your table to present the information in a suitable graphical form. **(4)**

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(d)	Suggest two limitations of this method that could give rise to unreliable results.
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)	Recording of raw data measurements, presentation of results and methods of data
	analysis.
	(3)
	OURSENON A CONTENUES ON THE NEWS BACE
	QUESTION 2 CONTINUES ON THE NEXT PAGE

undertaken to provide a	nethod and an indication of further work which could additional evidence for your conclusions.
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	(Total 18 mar)
	TOTAL FOR PAPER: 32 MAR