Centre No.			Paper Reference					Surname		Initial(s)		
Candidate No.			6	1	0	3	/	0	3	Signature		
	_	r Reference									Exami	ner's use only

6103/03 Edexcel GCE

Biology Biology (Human) Advanced Subsidiary

Unit 3 Paper 03 Monday 4 June 2007 – Morning

Time: 1 hour

Materials required for examination	Items included with question papers
Ruler	Nil

Instructions to Candidates

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

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

Answer ALL THREE 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 question paper is 38.

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.

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Turn over

Total

Team Leader's use only

Question Number

1

2

3



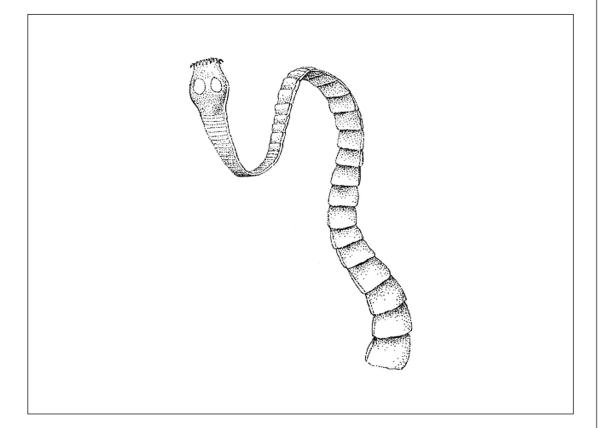
Leave blank

Answer ALL questions in the spaces provided.

1. (a) Tapeworms are heterotrophic organisms. The diagram below shows part of a tapeworm that occurs in dogs.

State the mode of heterotrophic nutrition carried out by this animal.

(1)

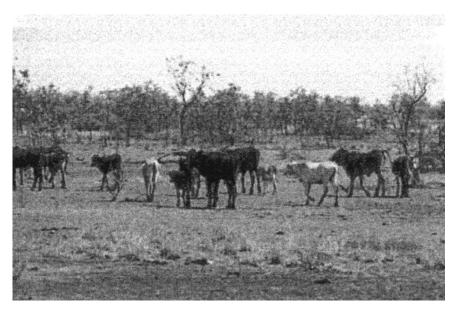


(b) On the diagram, label **three** features that are adaptations to this tapeworm's mode of nutrition. Under each of your labels, explain how the feature helps this tapeworm carry out its mode of nutrition. All your answers must be written on the diagram within the box.

(6)

(c) Compare the mode of nutrition of <i>Rhizopus</i> with that of the tapeworm. (2) OI (Total 9 marks)		Leave blank
	(c) Compare the mode of nutrition of <i>Rhizopus</i> with that of the tapeworm.	
(2) Q1		
		01
(Total 9 marks)		
	(Total 9 marks)	

2. The photograph below shows a herd of cattle on an area of dry grassland and scrub that is undergoing desertification in central Australia.

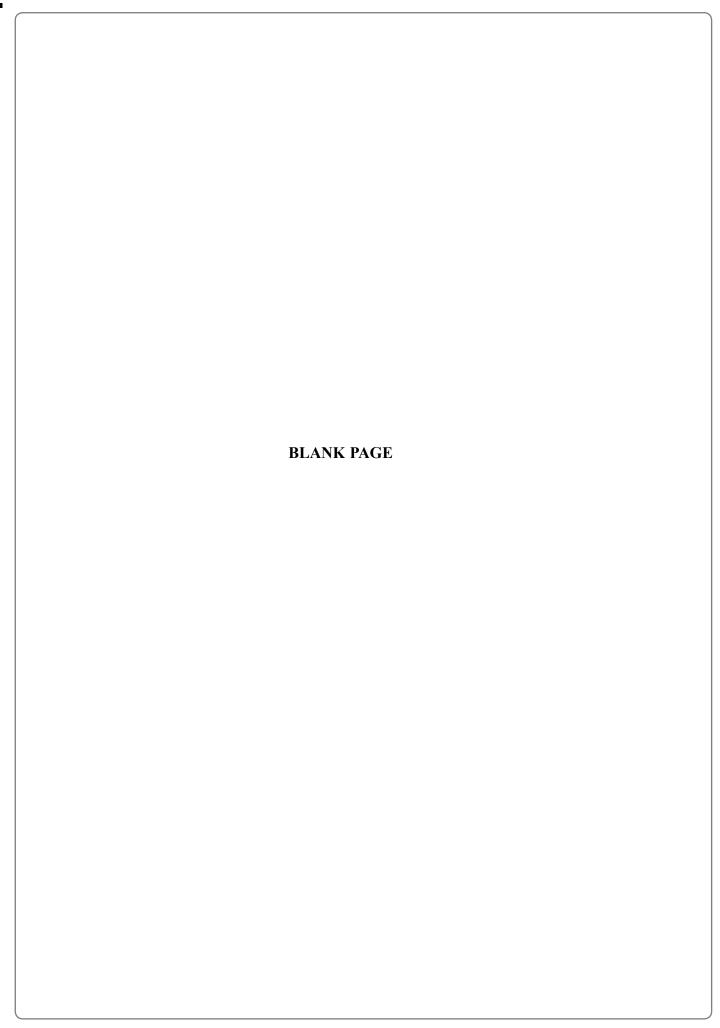


Wayne Lawler/Ecoscene

Australi	possible	causes	or u	ie de	seruncano	11 01	ary	grassianu	Ш	Centrar
1	 									
2	 									
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Australia.	in the driest parts of the world such as
Suggest two ways of preventing desertification Australia.	
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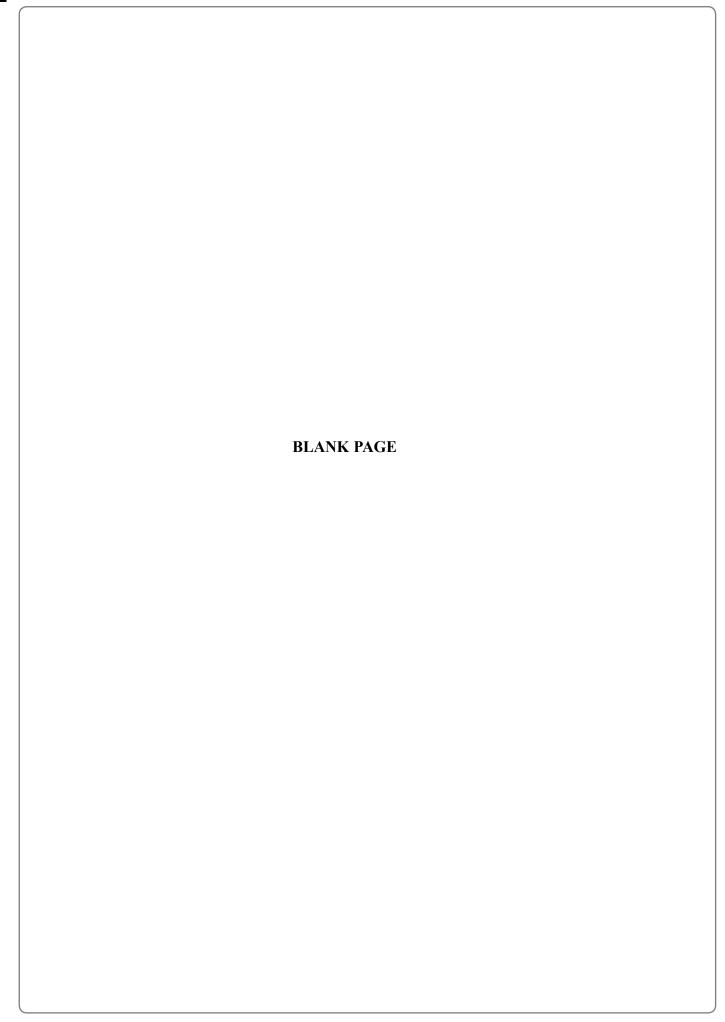
3. Over the last 40 years, forests and lakes in Western Europe have shown signs of acid rain damage (see Figure 1). Various treatments to reduce the damage caused by acid rain have been tried. One treatment involves the spreading of powdered limestone over the soil and on the surface of lakes.





Erik Schaffer / Ecoscene

Loch Fleet, a lake in Scotland, has been damaged by acid rain. This lake is surrounded by hills which are covered in coniferous forest. Between April and May 1986, more than 300 tonnes of powdered limestone were spread over the soil surrounding the lake. The pH and aluminium ion concentration of the water in the lake were monitored before and after adding the powdered limestone. The results are shown in Figures 2 and 3.



Leave blank

Figure 2: The graph below shows the change in the pH of the water in Loch Fleet in each month in 1986.

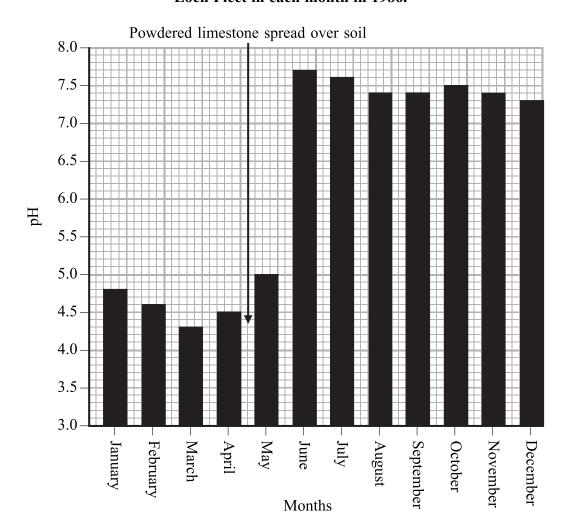
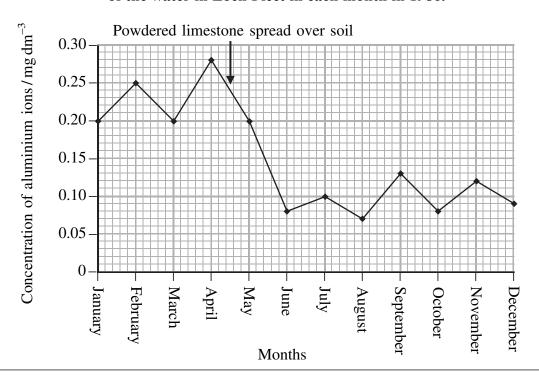
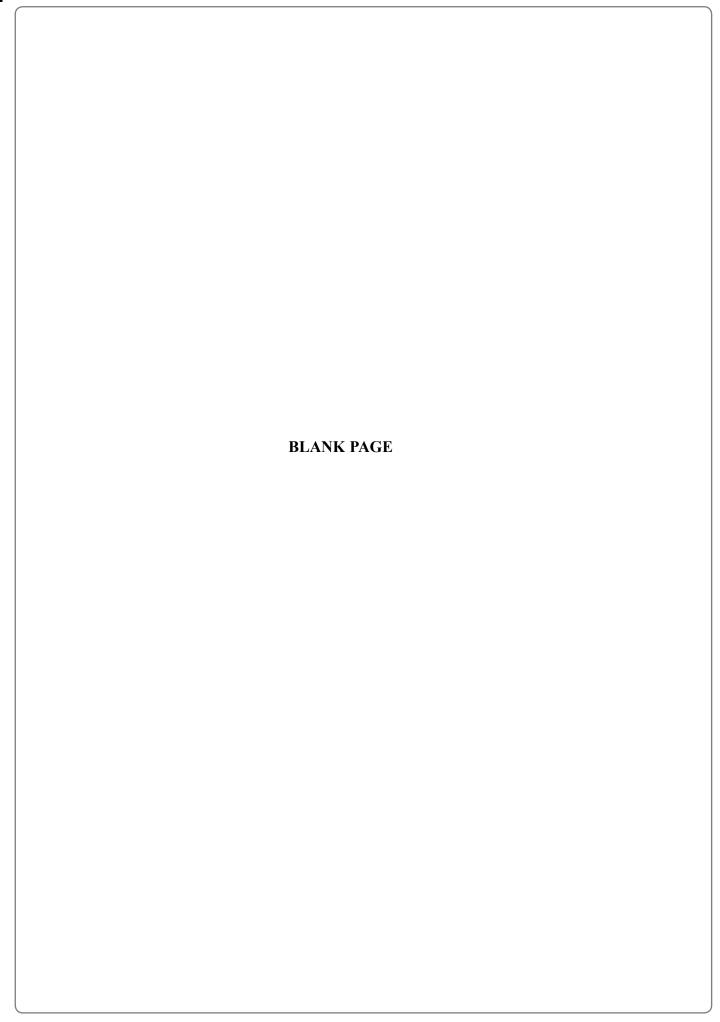
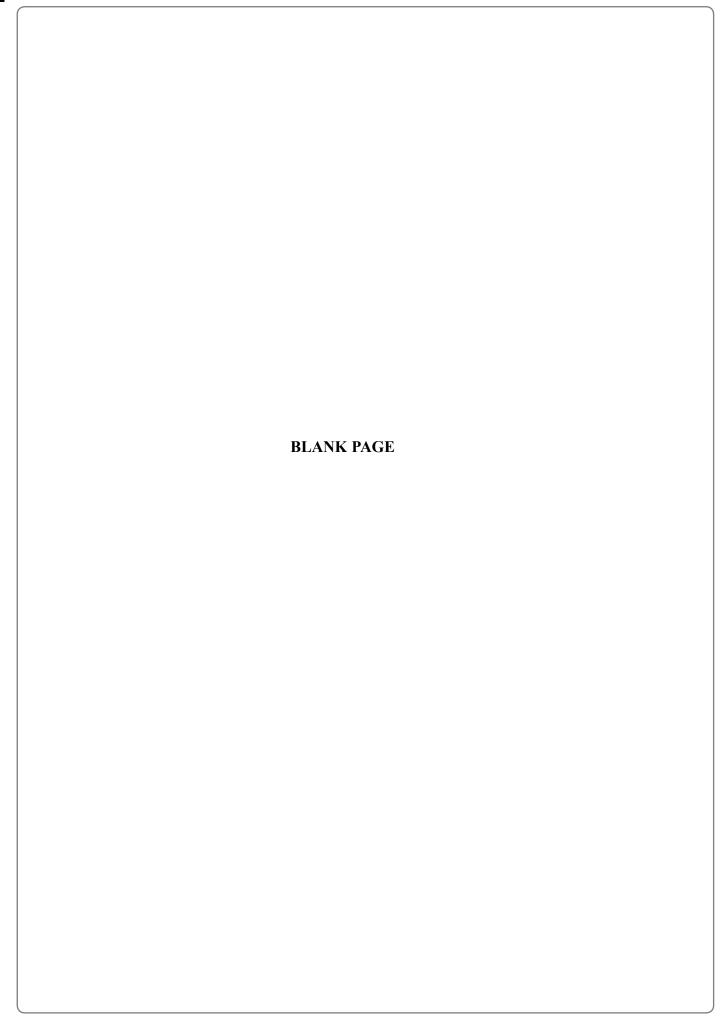


Figure 3: The graph below shows the change in the aluminium ion concentration of the water in Loch Fleet in each month in 1986.

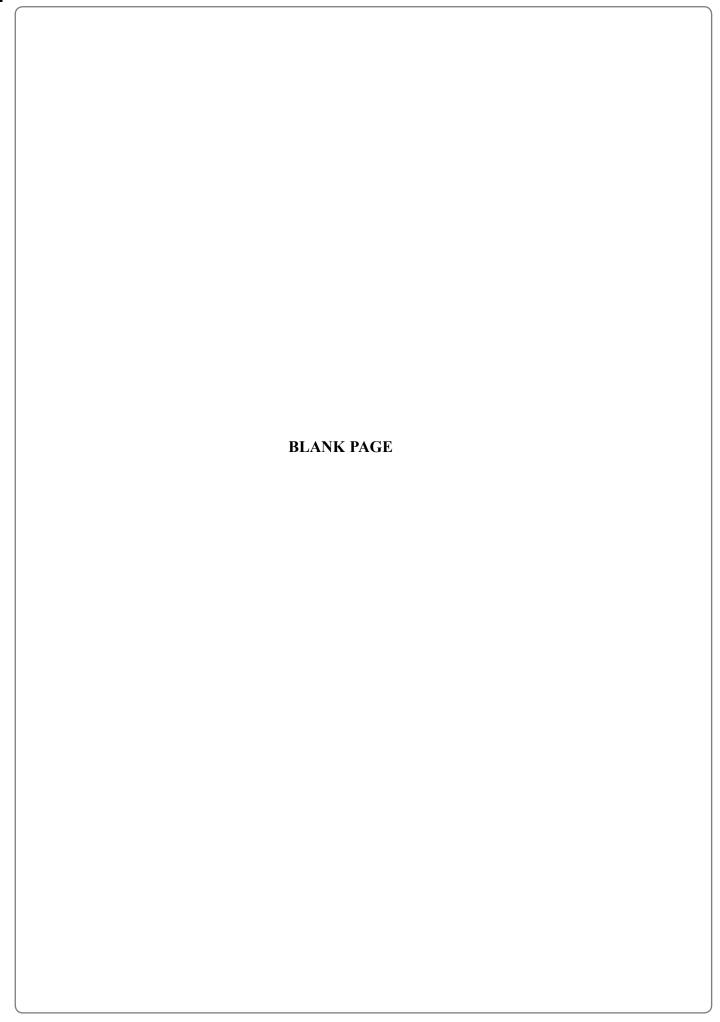




		(1)
<i>(</i> 1.)		(-)
(b)	State two main sources of the pollutants that cause acid rain.	
	1	
		••••
		••••
	2	
	2	
		••••
		(2)



(3)



		(2)
. a		
	Describe and explain the change in the aluminium ion concentration in the water the spreading of the powdered limestone over the soil, as shown in Figure 3.	after
	the spreading of the powdered innestone over the son, as shown in Figure 3.	
		•••••
		•••••
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		•••••
		(4)



(g)	Aluminium ions can be harmful to aquatic organisms. Describe the effect of	Leave blank
	aluminium ions on the health of fish.	
	(2)	
(h)	Describe the possible consequences of a decrease in the number of predatory fish on the food chain of a lake.	
	(2)	Q3
	(Total 19 marks)	
	TOTAL FOR PAPER: 38 MARKS	
	END	