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90929



Level 1 Biology, 2012

90929 Demonstrate understanding of biological ideas relating to a mammal as a consumer

9.30 am Thursday 15 November 2012 Credits: Three

Achievement		Achievement with Merit Achievement with Excel	
		Demonstrate in-depth understanding of biological ideas relating to a mammal as a consumer.	Demonstrate comprehensive understanding of biological ideas relating to a mammal as a consumer.

Check that the National Student Number (NSN) on your admission slip is the same as the number at the top of this page.

You should attempt ALL the questions in this booklet.

If you need more space for any answer, use the page(s) provided at the back of this booklet and clearly number the question.

Check that this booklet has pages 2–8 in the correct order and that none of these pages is blank.

YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

TOTAL

You are advised to spend 60 minutes answering the questions in this booklet.

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QUESTION ONE: HERBIVORES AND CARNIVORES

A rabbit is a herbivore and a dog is a carnivore. The diagram below shows the digestive systems of each of these mammals.

	Digestive system of a rabbit	Digestive system of a dog
		sons, this resource produced here.
	Tracy Greenwood, Lissa Bainbridge-Smith, Richard Allan, Yea	ar 12 Biology Student Workbook (Biozone, Hamilton, 2008), p 205
	the diagram above to discuss the significance out and a dog.	e of the differences in the digestive systems of a
In y	our answer you should:	
•	describe the differences between the rabbit	's and the dog's large intestine and caecum
•	explain the function of the large intestine ar	nd caecum in digestion
•	explain how these structures allow each ma food that they eat.	mmal to gain maximum nutrient value from the

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QUESTION TWO: VILLI	ASSESSOR'S USE ONLY
The diagram below shows a villus (plural villi), from the lining of the small intestine, with an enlargement showing microvilli.	
For copyright reasons, this resource cannot be reproduced here.	
Martin Hanson, <i>NCEA Level 1 Biology & Human Biology</i> (Auckland, ESA Publications, 2003), p 58. Discuss how the microvilli, capillary network and lacteal work together to allow the villi to carry	
out their function.	
In your answer you should: describe the overall role of the villi	
 relate the structure of each part to the role it plays in allowing the villus to carry out its function. 	
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QUESTION THREE: pH AND ENZYMES

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Different parts of the digestive system of mammals have different pH levels.

Discuss the importance of pH levels to the functioning of enzymes in the process of digestion. In your answer you should:

- consider TWO different parts of the digestive system with differing pH levels
- explain the effect of changing pH levels on the enzyme action
- use a specific example of an enzyme, and link pH changes to its role in digestion in the two parts of the digestive system considered.

Parts of the digestive system considered:	
1	
2	

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		Extra paper if required.	
OUESTION		Write the question number(s) if applicable.	
QUESTION NUMBER	l		