SUPERVISOR'S USE ONLY

90929



Level 1 Biology, 2015

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

2.00 p.m. Friday 20 November 2015 Credits: Three

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate understanding of biological ideas relating to a mammal(s) as a consumer(s).	Demonstrate in-depth understanding of biological ideas relating to a mammal(s) as a consumer(s).	Demonstrate comprehensive understanding of biological ideas relating to a mammal(s) as a consumer(s).

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 2–12 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

ASSESSOR'S USE ONLY

QUESTION ONE: TEETH FOR LIFE

ASSESSOR'S USE ONLY

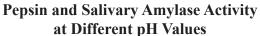
The pictures below show the skull of a carnivore and the skull of a herbivore. They have different structures to assist with the digestion of the different types of foods eaten.

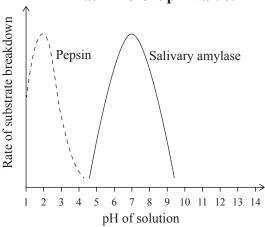
Cat skull Sheep skull For copyright reasons, For copyright reasons, this resource cannot be this resource cannot be reproduced here. reproduced here. http://illuminationstudios.com/wp-content/http://www.cpr-savers.com/assets/images/ uploads/2011/10/catskull.jpg prodimages/T30018.jpg Define the term digestion. (a) Explain how the teeth and jaws of cats and sheep are adapted to deal with their different types (b) of food. In your answer you should: name the type of digestion that uses the teeth explain how each animal's teeth are adapted to suit each animal's typical diet compare the teeth and jaw of the cat with the teeth and jaw of the sheep, and explain how and why they are different.

ASSESSOR'S USE ONLY

(c) The rates of substrate breakdown by salivary amylase and pepsin were tested across a range of different pH values, and the results are shown in the graph below.

ASSESSOR'S USE ONLY





http://www.skill-guru.com/228/mcas-high-school-biology-test-spring-2011/questions

Referring to each of these enzymes, explain how these results relate to digestion in the mouth and in the stomach.

Your answer should include:

- a definition of chemical digestion
- a description of where each enzyme is produced, and where it carries out its function
- a discussion of how each enzyme's activity is affected by the pH changes that occur as food moves through the digestive system.

ASSESSOR'S USE ONLY

QUESTION TWO: DIGESTIVE SYSTEMS

ASSESSOR'S USE ONLY

For copyright reasons, this resource cannot be reproduced here.

For copyright reasons, this resource cannot be reproduced here.

http://www.mirror.co.uk/news/uk-news/hero-bengal-cat-leo-scares-98886

 $\label{lem:http://cache2.asset-cache.net/gc/dv1637031-studio-cut-out-of-a-sheep-gettyimages.jpg?v=1&c=IWSAsset&k=2&d=PbAEhI rzoCHBv40PPIGN5LT4ISBLbqOzsOGL5AT2frA%3D$

For copyright reasons, this resource cannot be reproduced here.

https://classconnection.s3.amazonaws.com/235/flashcards/2166235/jpg/picture11367354350876.jpg

Compare and contrast the digestive system of the cat with the digestive system of the sheep. In your answer you should:

- describe the similarities AND differences in the features of the cat's and sheep's digestive systems
- explain how the different digestive systems are suited to the dietary requirements of a carnivore and a herbivore.

ASSESSOR'S USE ONLY
USE ONLY

QUESTION THREE: DIGESTION AND TRANSPORT

Once chyme (a thick semifluid of partly digested material) leaves the stomach, it enters the first part of the small intestine (duodenum), where further digestion can occur.

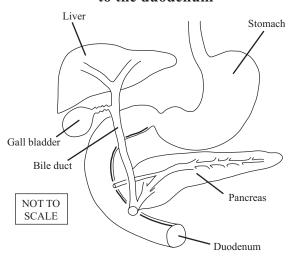
(a) Explain how digestion occurs in the small intestine.

In your answer you should:

- complete the table below
- explain how digestion is carried out by named enzymes and other substances that are released into the small intestine, including the substrates used and the products formed.

Digestive tract from the stomach to the duodenum

ASSESSOR'S USE ONLY



Adapted from: http://www.upmc.com/patients-visitors/education/gastro/Pages/ercp.aspx

Table of digestive enzymes and their substrates

Substrate	Enzyme	Product(s)
	Lipase	
		Amino acids
Starch		

Question Three continues on the following page.

ASSESSOR'S USE ONLY

		this res	opyright reas source canr roduced he	not be			
		1			estine cross-sec		
	Adapted from:	http://www.dav	riddarling.info/i	mages/small_int	C3tille_c1033-3c0	non.jpg	
In your an			uddarling.info/i	mages/small_int	estine_cross-sec	tion.jpg	
• expl	swer you should ain how the struamed substances	l: ctures in the	e small inte	stine help inc			ransport
explorer of notice	swer you should	l: ctures in the s to other ce l products o	e small intes lls within th	stine help ind ne body are transport	crease absor	ption and t	
expl of ndisc	swer you should ain how the stru amed substances uss how the fina	l: ctures in the s to other ce l products o	e small intes lls within th	stine help ind ne body are transport	crease absor	ption and t	
expl of ndisc	swer you should ain how the stru amed substances uss how the fina	l: ctures in the s to other ce l products o	e small intes lls within th	stine help ind ne body are transport	crease absor	ption and t	
expl of ndisc	swer you should ain how the stru amed substances uss how the fina	l: ctures in the s to other ce l products o	e small intes lls within th	stine help ind ne body are transport	crease absor	ption and t	
expl of ndisc	swer you should ain how the stru amed substances uss how the fina	l: ctures in the s to other ce l products o	e small intes lls within th	stine help ind ne body are transport	crease absor	ption and t	
expl of ndisc	swer you should ain how the stru amed substances uss how the fina	l: ctures in the s to other ce l products o	e small intes lls within th	stine help ind ne body are transport	crease absor	ption and t	
expl of ndisc	swer you should ain how the stru amed substances uss how the fina	l: ctures in the s to other ce l products o	e small intes lls within th	stine help ind ne body are transport	crease absor	ption and t	
expl of ndisc	swer you should ain how the stru amed substances uss how the fina	l: ctures in the s to other ce l products o	e small intes lls within th	stine help ind ne body are transport	crease absor	ption and t	
expl of ndisc	swer you should ain how the stru amed substances uss how the fina	l: ctures in the s to other ce l products o	e small intes lls within th	stine help ind ne body are transport	crease absor	ption and t	
expl of ndisc	swer you should ain how the stru amed substances uss how the fina	l: ctures in the s to other ce l products o	e small intes lls within th	stine help ind ne body are transport	crease absor	ption and t	

	Extra paper if required.	ASSESSOR'S
QUESTION NUMBER	Write the question number(s) if applicable.	USE ONLY
NUMBER		1

ASSESSOR'S USE ONLY

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