

2: Animal nutrition – Topic questions

Paper 3

The questions in this document have been compiled from a number of past papers, as indicated in the table below.

Use these questions to formatively assess your learners' understanding of this topic.

Question	Year	Series	Paper number
3	2016	March	32
4	2016	June	33
7	2016	November	31

The mark scheme for each question is provided at the end of the document.

You can find the complete question papers and the complete mark schemes (with additional notes where available) on the School Support Hub at www.cambridgeinternational.org/support

3 (a) Define the term *enzyme*.

.....

.....

.....

..... [2]

(b) (i) Fig. 3.1 shows a diagram of part of the human alimentary canal and associated organs.

Name the structures labelled **A**, **B**, **C** and **D**.

Write your answers on Fig. 3.1.

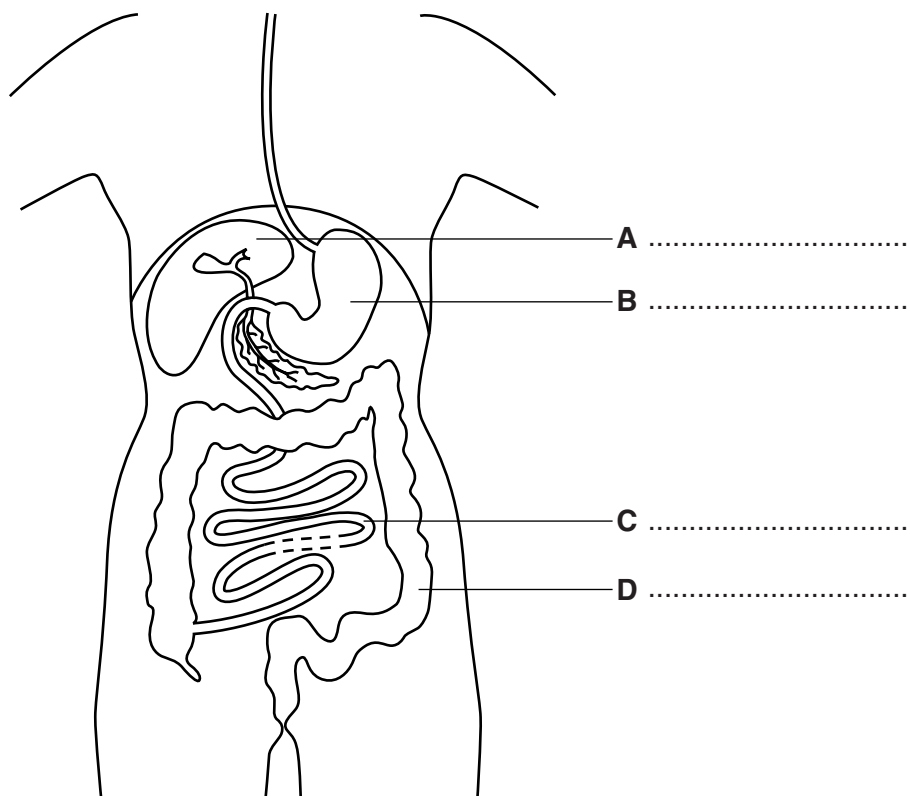


Fig. 3.1

[4]

- (ii) Fig. 3.2 also shows a diagram of part of the human alimentary canal and associated organs.

On Fig. 3.2, draw label lines with letters to show:

- E** where hydrochloric acid is made
- F** where bile is made
- G** where amylase is made
- H** where egestion occurs.

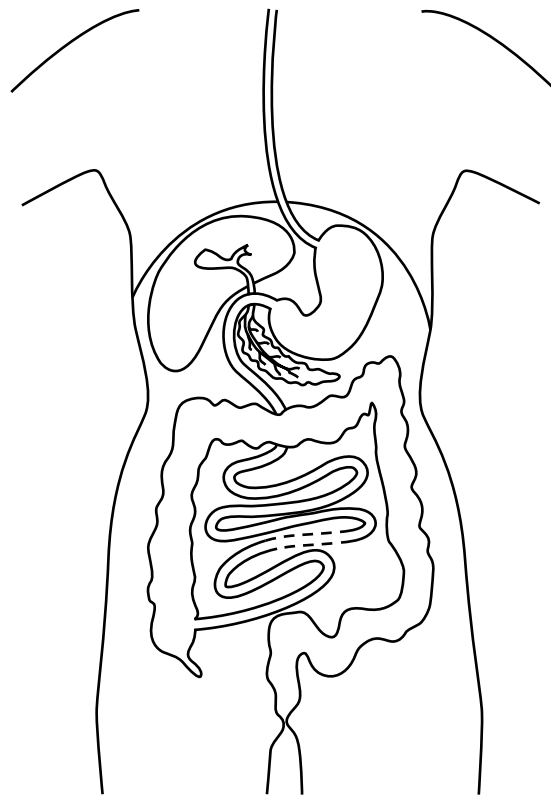


Fig. 3.2

[4]

- (c) (i) State where digested food is absorbed.

.....
..... [1]

(ii) Digestion of carbohydrate produces glucose.

Describe the absorption of glucose.

.....

.....

.....

.....

..... [2]

[Total: 13]

- 4 (a) State what is meant by the term *balanced diet*.

.....

.....

.....

.....

.....[2]

- (b) Fig. 4.1 shows a pie chart of a person's diet.

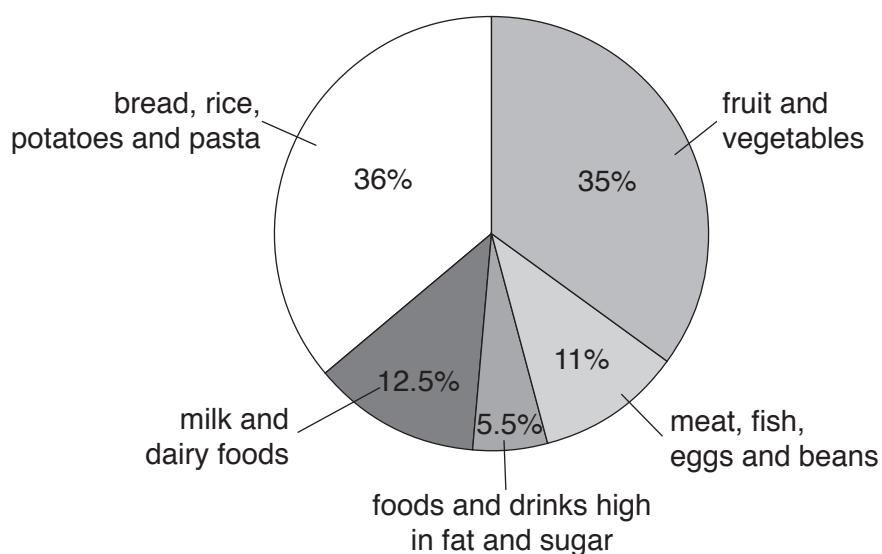


Fig. 4.1

- (i) Bread, rice, potatoes and pasta form 36% of this diet.

Explain why these foods are important to the body.

.....

.....

.....

.....

.....[2]

- (ii) State the foods shown in Fig. 4.1 that are rich in protein **and** state why proteins are important to the body.

.....

.....

.....

.....

.....[2]

- (iii) Only 5.5% of this diet is made up of food and drinks that are high in fat and sugar.

Describe **one** harmful effect of eating too much fat.

.....

.....

.....[1]

- (iv) The diet in Fig. 4.1 would **not** be suitable for everyone's needs.

State **and** explain **two** factors that could affect a person's dietary needs.

.....

.....

.....

.....

.....

.....

.....[4]

[Total: 11]

- 7 (a) Teeth are involved in mechanical digestion.

What is meant by the term *mechanical digestion*?

.....
..... [2]

- (b) Fig. 7.1 shows a section through a molar tooth.

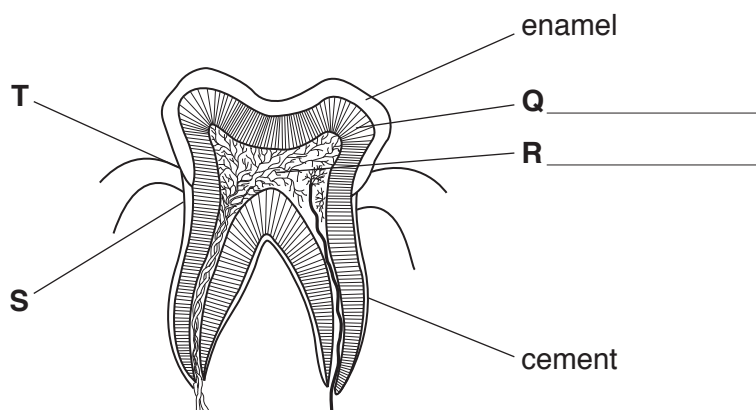


Fig. 7.1

- (i) On Fig. 7.1, label parts **Q** and **R**. [2]

- (ii) State **two** reasons why this tooth **cannot** be a canine tooth.

1
.....
2
..... [2]

- (iii) Gum disease causes the gums to shrink from position **T** to position **S**, as shown on Fig. 7.1.

Suggest why the tooth is more likely to decay when the gums are at position **S**.

.....
.....
..... [2]

- (iv) State **two** ways of maintaining healthy teeth.

1
.....
2
.....

[2]

[Total: 10]

Abbreviations used in the Mark Scheme:

;	separates marking points
/	alternatives
I	ignore
R	reject
A	accept (for answers correctly cued by the question, or guidance for examiners)
AW	alternative wording (where responses vary more than usual)
AVP	any valid point
ecf	credit a correct statement / calculation that follows a previous wrong response
ora	or reverse argument
()	the word / phrase in brackets is not required, but sets the context
<u>underline</u>	actual word given must be used by candidate (grammatical variants excepted)
max	indicates the maximum number of marks that can be given

Question	Answer	Marks
3 (a)	protein; that functions as a biological catalyst	[2]
3 (b) (i)	A: liver; B: stomach; C: small intestine/ ileum; D: large intestine/ colon;	[4]
3 (b) (ii)	E: ending in the stomach; F: ending on the liver; G: ending on the pancreas /wall of ileum; H: ending on the anus;	[4]
3 (c) (i)	ileum/ small intestine/ villi;	[1]
3 (c) (ii)	diffusion; (A absorption into stomach here) active transport; ref to glucose being small molecule/ soluble; through (thin) wall; into blood / plasma / blood capillary; villi; (villi) provide large surface area (per volume);	[max 2]
[Total: 13]		

Question	Answer	Marks
4 (a)	diet with all classes / groups of nutrients; in the correct proportions ; in the correct amounts ; ref. to energy ; idea of staying healthy ; (A list of at least 5 groups)	[max 2]
4 (b) (i)	(rich in) carbohydrates / starch; provide energy / joules / calories; for physical activity / body processes ;	[max 2]
4 (b) (ii)	meat/ fish/ eggs / beans / milk and dairy foods ; needed for growth/ repair/ to make enzymes / build muscles ;	[2]
4 (b) (iii)	obesity / overweight ; CHD/ heart disease/ high blood pressure ; diabetes ; liver disease/ gall stones ;	[max 1]
4 (b) (iv)	(One mark for factor and one mark for explanation; explanation must be linked to the factor.) age of person ; if they are growing or not; activity of person ; idea of more food (group) for energy / repair or build tissues ; obese/ anorexic ; might need to lose or gain weight ; gender (A sex); females generally require less than males ; pregnancy or lactating; more food need ; ref. to different metabolic rates ; needing more or less food ; medical conditions e.g. diabetes, allergies, illness ; need to avoid gluten/ sugars / fats / allergens / lactose OR need to eat certain food to alleviate a medical condition ; personal choice/ vegetarian/ vegan/religious / taste ; appropriate change in diet to suit choice diet ;	[max 4]
[Total: 11]		

Question	Answer	Marks
7 (a)	breakdown of food, into smaller pieces/to increase SA; (R ref. molecules) ref. to chewing / tearing /using teeth /masticating grinding; without chemical change to the food molecules; (I ref. to enzymes)	[2]
7 (b) (i)	(Q) dentine; (R) pulp (cavity); (A capillary / nerve)	[2]
7 (b) (ii)	has two cusps AW / has larger SA / is not pointed /canine only has one cusp / canine is pointed ; (I sharp(er)) has two roots / canine only has one root ;	[2]
7 (b) (iii)	cement is exposed /AW; cement is softer than enamel; cement decays, easily /quickly AW;	[2]
7 (b) (iv)	avoid eating sugary foods /eat less sugar; (A avoid, acidic / fizzy drinks) do not eat between meals /AW; brush / clean/wash, teeth regularly; use of, dental floss / interdental brushes; use fluoride, toothpaste / water; calcium rich diet; visit dentist;	[2]
[Total: 10]		