

**Human nutrition – 2021 IGCSE 0610**

1. [Nov/2021/Paper\\_11/No.14](#)

Which reagent is used to test for the presence of vitamin C?

- A Benedict's
- B biuret
- C DCPIP
- D ethanol

2. [Nov/2021/Paper\\_11/No.13](#)

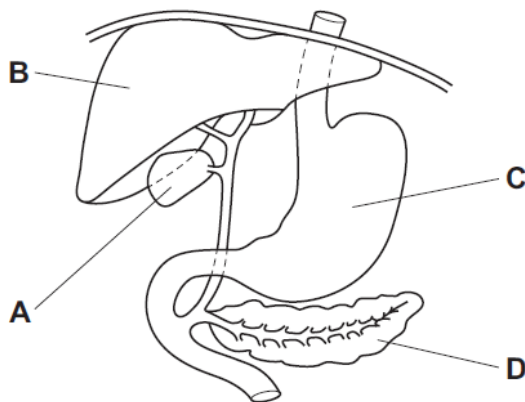
Which food is the best source of vitamin C?

- A bread
- B meat
- C milk
- D oranges

3. [Nov/2021/Paper\\_11/No.16](#)

The diagram shows part of the human alimentary canal and associated organs.

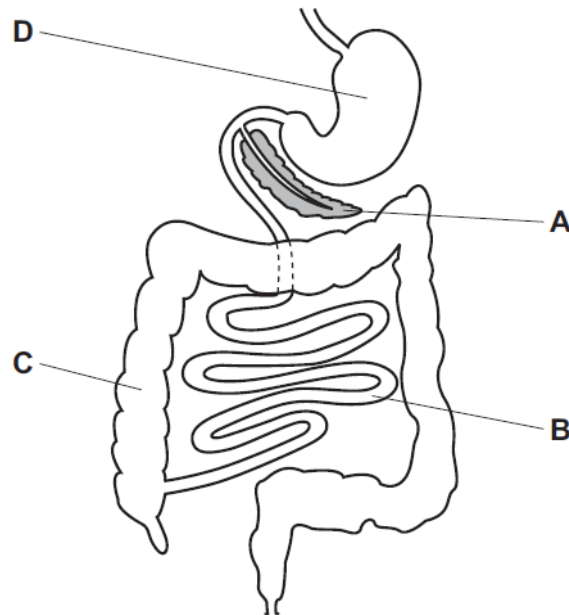
Which structure produces hydrochloric acid?



4. Nov/2021/Paper\_12/No.16

The diagram shows part of the alimentary canal and associated organs.

Where does most water absorption take place?



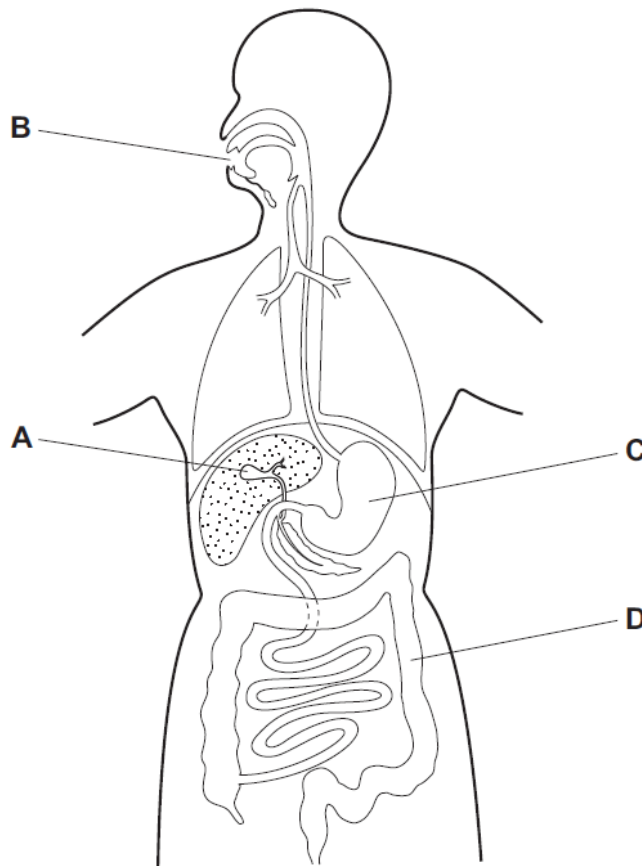
5. Nov/2021/Paper\_13/No.14

A deficiency of which nutrient can cause scurvy?

- A calcium
- B iron
- C vitamin C
- D vitamin D

6. Nov/2021/Paper\_13/No.16

Which part of the alimentary canal produces an enzyme that digests proteins?



7. Nov/2021/Paper\_21/No.13

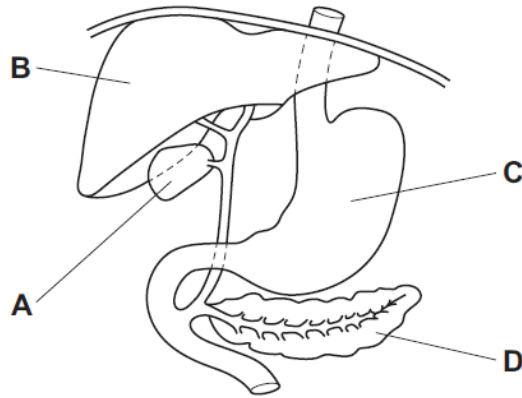
Which food is the best source of vitamin C?

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- B meat
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- D oranges

## 8. Nov/2021/Paper\_21/No.14

The diagram shows part of the human alimentary canal and associated organs.

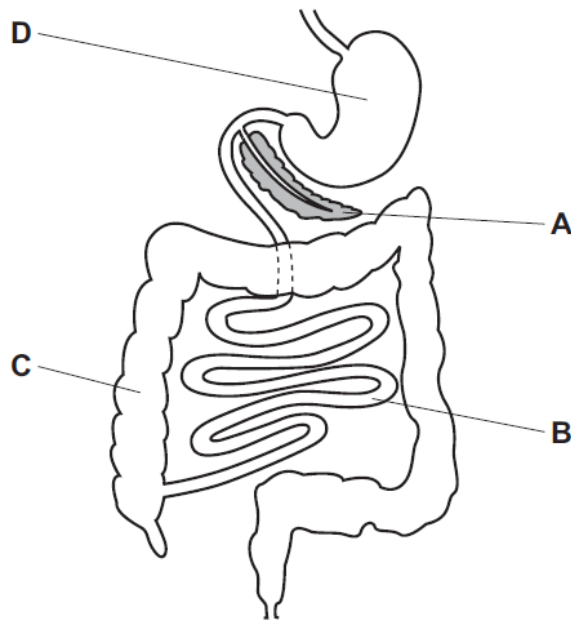
Which structure produces hydrochloric acid?



## 9. Nov/2021/Paper\_22/No.14

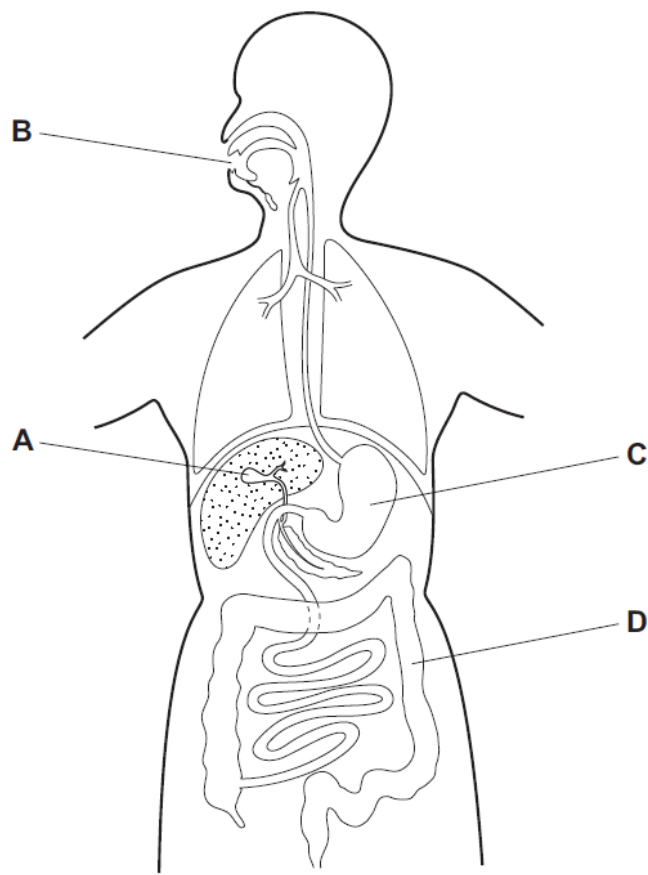
The diagram shows part of the alimentary canal and associated organs.

Where does most water absorption take place?



10. Nov/2021/Paper\_23/No.14

Which part of the alimentary canal produces an enzyme that digests proteins?



11. Nov/2021/Paper\_32/No.4

- (a) It is important for humans to consume a balanced diet.

Describe what is meant by the term balanced diet.

.....

.....

.....

.....

..... [2]

- (b) Table 4.1 shows some of the different components of a balanced diet and their principal sources.

Complete Table 4.1 using words from the list.

Each word can only be used **once** or not at all.

grapefruit

milk

olive oil

rice

tuna fish

water

Table 4.1

component	example of principal source
calcium	
carbohydrate	
protein	
vitamin C	

[4]

- (c) A diet that does not contain component
- X**
- can cause constipation.

State the name of component **X**.

..... [1]

- (d) A person's diet contains too much energy and too much fat.

Describe the possible risks of this diet.

.....

.....

.....

.....

..... [2]

- (e) State why a pregnant woman needs to eat more food than a woman who is not pregnant.

.....

.....

..... [1]

- (f) Nutrition is one of the characteristics of living things.

State the names of **three other** characteristics of living things.

1 .....

2 .....

3 ..... [3]

[Total: 13]

12. Nov/2021/Paper\_33/No.5

(a) A class of students measured their wrist circumference, as shown in Fig. 5.1.

Wrist circumference is an example of a characteristic that shows **continuous** variation in humans.



Fig. 5.1



Fig. 5.2 shows the results of the investigation.

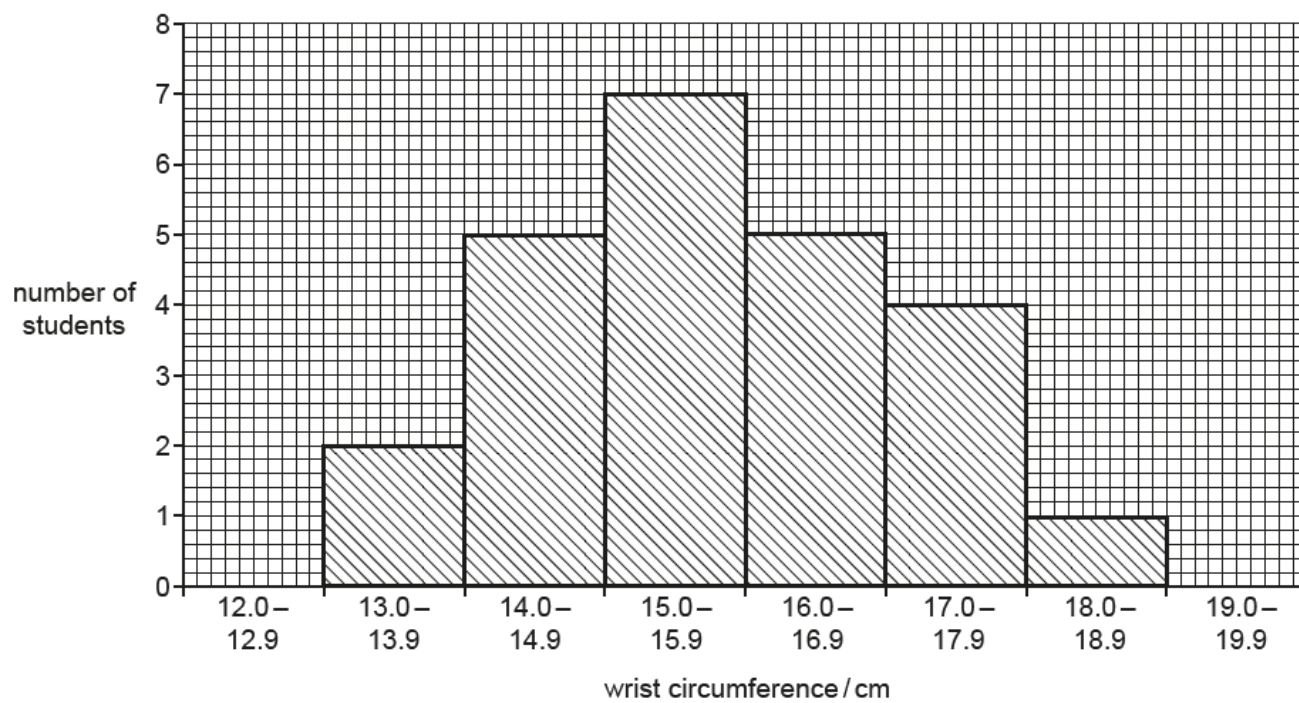


Fig. 5.2

- (i) Calculate the total number of students in this investigation.

..... [1]

- (ii) State the most frequent wrist circumference range.

..... [1]

- (iii) Explain how these data show that wrist circumference is an example of continuous variation.

.....

.....

..... [1]

- (b) State **one** example of discontinuous variation.

..... [1]

- (c) Variation can be caused by mutation.

Complete the sentences about mutation.

A mutation is a ..... change.

Mutation is the way new ..... are formed which are versions of a gene.

Mutation can be caused by ..... radiation and some chemicals.

[3]

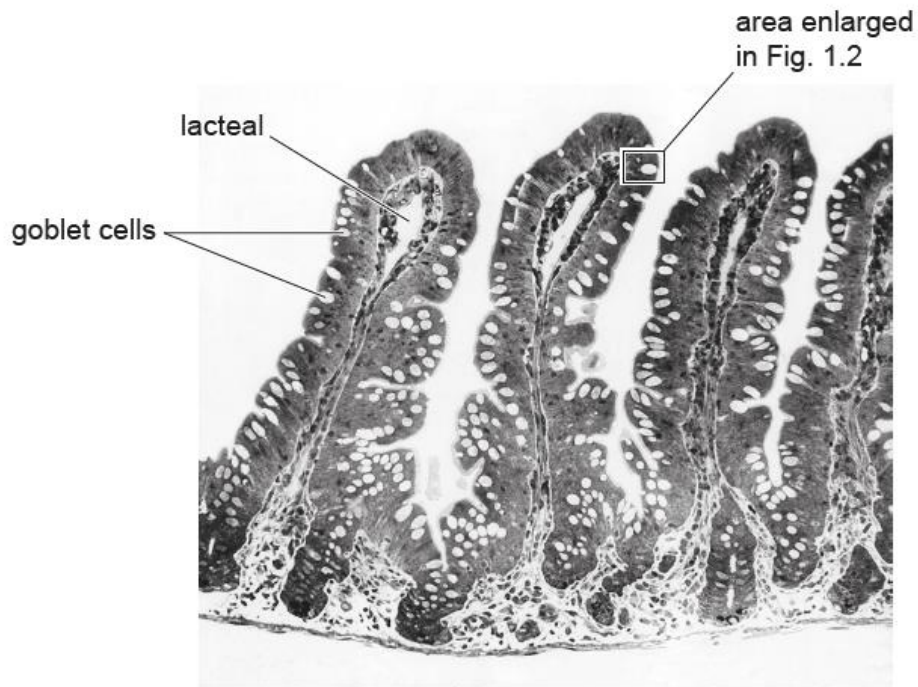
[Total: 7]

**13. Nov/2021/Paper\_42/No.1**

Fig. 1.1 shows several villi from the ileum, which is part of the small intestine.

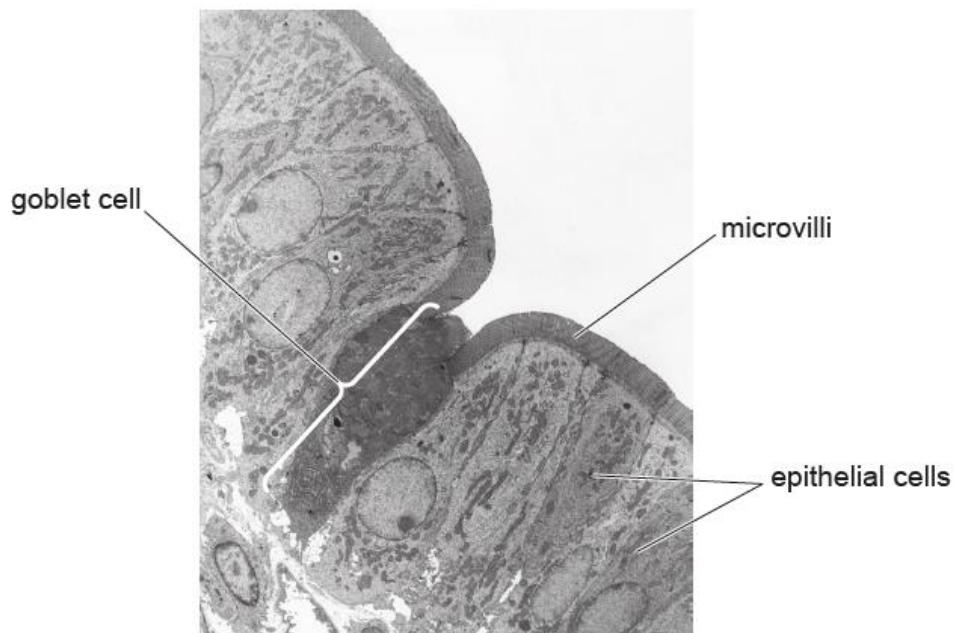
(a) State the name of **one** other part of the small intestine.

..... [1]



**Fig. 1.1**

Fig. 1.2 shows the tip of a villus in more detail.



**Fig. 1.2**

(b) The epithelial cells of the villi absorb nutrients by diffusion and active transport.

(i) Describe how active transport differs from diffusion.

.....

.....

.....

.....

..... [3]

(ii) Explain the importance of the microvilli shown in Fig. 1.2.

.....

.....

.....

.....

..... [2]

(c) Goblet cells provide protection for the epithelial cells that line the intestine.

(i) State the name of the protective substance produced by goblet cells.

..... [1]

(ii) Suggest why a protective substance is necessary in the intestines.

.....

.....

.....

.....

..... [2]

- (d) Fig. 1.1 shows a lacteal in the centre of each villus.

Describe the roles of lacteals.

.....

.....

.....

.....

..... [2]

- (e) Complete Table 1.1 by identifying the level of organisation of each structure.

Choose your answers from the list. Each word or phrase may be used once, more than once or not at all.

**cell    cell structure    organ    organ system    organism    tissue**

**Table 1.1**

structure	level of organisation
gall bladder	
endoplasmic reticulum	
intestinal epithelium	
ileum	

[4]

- (f) Many fungi are decomposers that feed on dead plants. The fungi secrete enzymes to digest large molecules.

Students made an extract from a species of fungus. The extract contained digestive enzymes.

The students carried out an investigation to find out if amylase and pectinase were present in the fungal extract.

They made agar plates by filling Petri dishes with agar jelly containing either starch or pectin. They cut four holes of the same size in the agar jelly in each Petri dish.

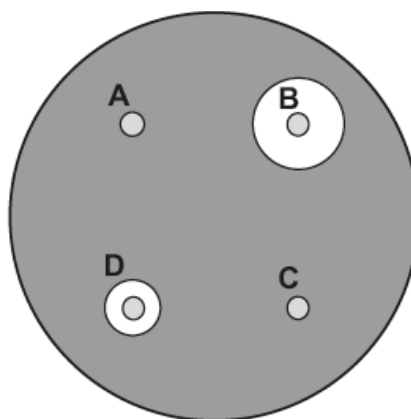
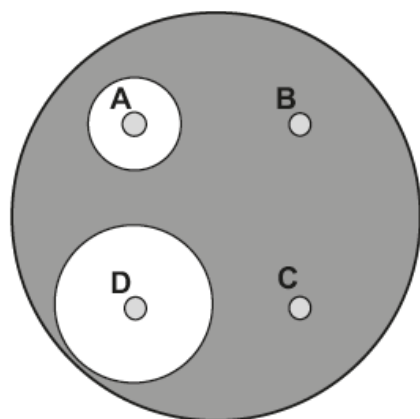
The holes in each Petri dish contained the same volume of:




- A** – 1% amylase solution
- B** – 1% pectinase solution
- C** – distilled water
- D** – fungal extract.

The Petri dishes were kept at 27 °C for four days. After this time a dye was poured into each dish to stain the areas where starch and pectin remained.

Fig. 1.3 shows drawings of the stained agar in the Petri dishes. The clear zones indicate the areas where no starch or pectin remained.

**Petri dish containing pectin  
in agar jelly**



 stained area  
 clear zone  
 hole in agar jelly

**Fig. 1.3**

- [5]

- ..... [1]