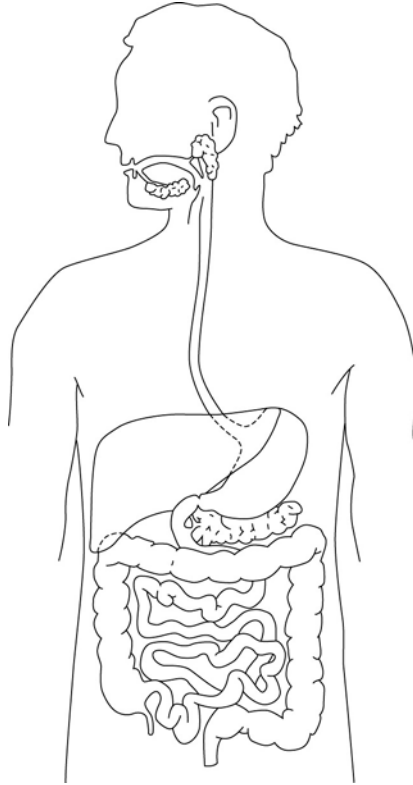


0 6**Figure 4** shows the human digestive system.**Figure 4****0 6****1**Label the stomach and pancreas on **Figure 4**.**[1 mark]****Question 6 continues on the next page**

Many people suffer from stomach ulcers caused by a species of bacteria called *Helicobacter pylori*.

The stomach is lined with a protective lining of mucus.

Helicobacter pylori are acid-tolerant bacteria which can damage this mucus lining.

0 6 . **2**

Suggest how an infection with *Helicobacter pylori* might result in a stomach ulcer developing.

[2 marks]

0 6 . **3**

Helicobacter pylori can also cause stomach cancer.

Describe how a person infected with *Helicobacter pylori* could also develop liver cancer.

[3 marks]

0 6 . **4** Gluten is a form of protein found in some grains.

Describe the test you would use to find out if protein is present in food.

[2 marks]

0 6 . **5** Coeliac disease is a disease of the digestive system.

It damages the lining of the small intestine when foods that contain gluten are eaten.

When people with coeliac disease eat foods that contain gluten:

1. their immune system forms antibodies to gluten
2. these antibodies attack the lining of the small intestine
3. this causes inflammation in the intestines and damages the villi.

Symptoms of coeliac disease include poor growth.

Suggest why a person with coeliac disease might have this symptom.

[4 marks]

Question 6

Question	Answers	Extra information	Mark	AO / Spec. Ref.
06.1	stomach and pancreas correctly labelled		1	AO1/1 4.2.2.1
06.2	bacteria not killed (by stomach acid / HCl) and so they damage mucus lining		1	AO2/1 4.3.1.6
	so <u>acid / HCl</u> damages stomach tissue / causes an ulcer	allow bacteria infect stomach tissue	1	AO3/2b 4.3.1.6
06.3	if the cancer is malignant		1	AO1/1 4.2.2.7
	(cancer) cells can spread to other organs		1	AO1/1 4.2.2.7
	via the blood forming a secondary tumour	do not award marking points 2 or 3 without marking point 1	1	AO1/1 4.2.2.7
06.4	add Biuret reagent to food sample	allow sodium / potassium hydroxide (solution) + copper sulfate(solution)	1	AO1/2 4.2.2.1
	mauve / purple colour shows protein present		1	
06.5	damaged villi reduce surface area for absorption (of food molecules)		1	AO3/2b 4.2.2.1
	(therefore) fewer amino acids and glucose absorbed		1	AO3/2b 4.2.2.1
	with less glucose transfer of energy from respiration is reduced		1	AO3/2b 4.2.2.1
	and fewer amino acids available to build new proteins		1	AO3/2b 4.2.2.1
Total			12	