

G9 Coordinated Science Semester 1 Examination Revision Questions Set #3

0654_s18_qp 31 & 41 Extended Response Questions

Paper 31:

2 Aluminium is a metal and oxygen is a non-metal.

(a) (i) State **two** general **physical** properties of metals.

1

2

[2]

(ii) Complete the sentences using words from the list.

Each word may be used once, more than once or not at all.

atom electrons five molecule

protons six three two

The formula of aluminium oxide, Al_2O_3 , shows
aluminium ions and oxide ions.

There are fewer in an aluminium ion, Al^{3+} , than there
are in an aluminium

[3]

5 (c) A sample of air is collected near a road in a city.

Six of the gases contained in the sample are listed.

- carbon dioxide
- carbon monoxide
- nitrogen
- nitrogen dioxide
- oxygen
- water vapour

(i) State the gases in the list that are elements.

.....[1]

(ii) Explain why carbon dioxide is a compound and air is a mixture.

carbon dioxide

.....

air

.....

[2]

(iii) State **two** gases in the list that cause air pollution.

1

2

[2]

(iv) State **two** gases in the list that cause the rusting of iron.

1

2

[1]

10 Fig. 10.1 shows the activity of some digestive enzymes at different pH values.

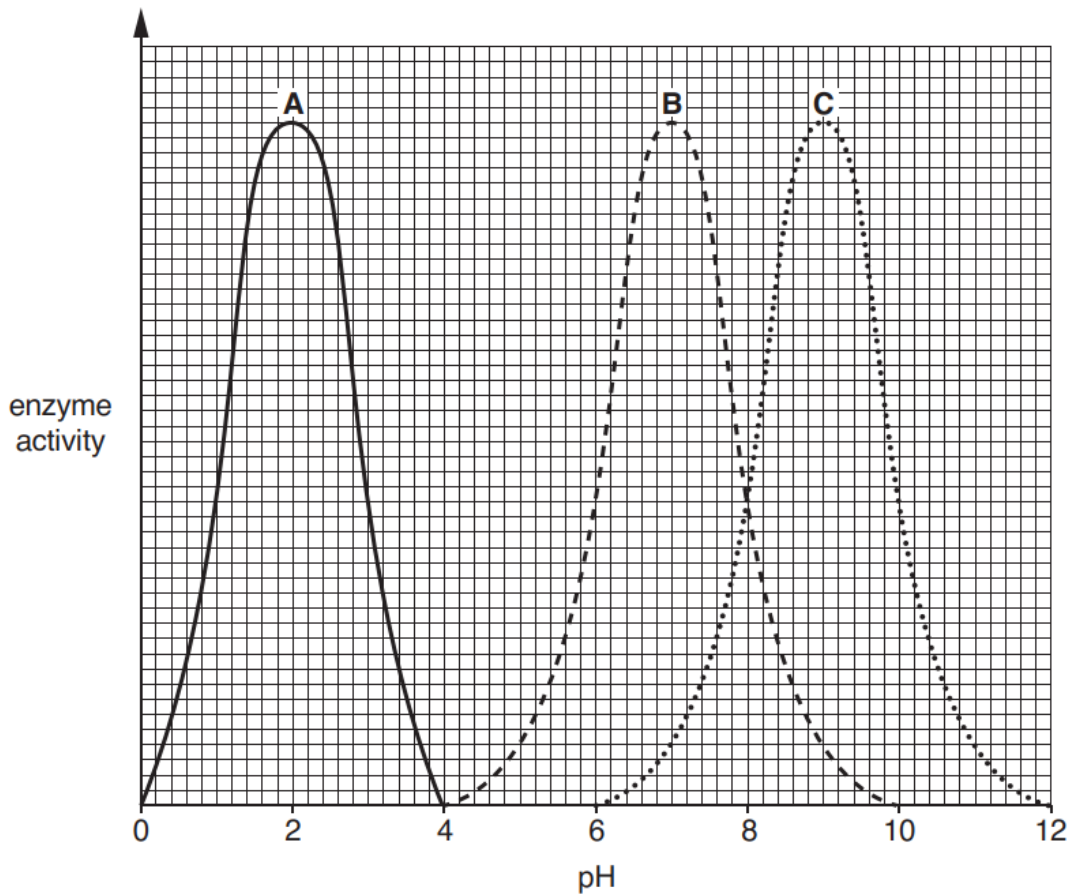


Fig. 10.1

(a) (i) Use Fig. 10.1 to state the optimum pH of enzyme B.

..... [1]

(ii) Use Fig. 10.1 to state a pH at which enzyme C does **not** work.

..... [1]

(b) Enzyme A is the enzyme protease.

(i) State where protease is secreted in the alimentary canal.

..... [1]

(ii) Name the products made by the action of protease.

..... [1]

(c) (i) Describe the function of enzymes in chemical digestion.

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

(ii) Apart from chemical digestion, state and describe **one** other action in the alimentary canal that aids digestion.

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

Paper 41:

1 (a) The lining of the small intestine is covered with villi.

Fig. 1.1 shows a cross-section of a villus.

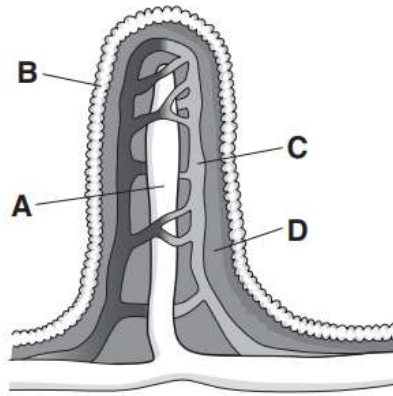


Fig. 1.1

(i) Using the letters **A**, **B**, **C** and **D** in Fig. 1.1, identify the part where
fat is absorbed,
glucose enters the blood stream.

[2]

(ii) Explain how the shape of the villus is related to its function.

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

(b) Fats are an important part of the diet.

State the smaller basic units that make up fats.

.....[1]

(c) Describe how bile aids the breakdown of fats.

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

- 11** Complete Fig. 2.3 to show the dot-and-cross diagram of the covalent bonding in carbon dioxide.

Show all of the outer-shell electrons in all of the atoms.

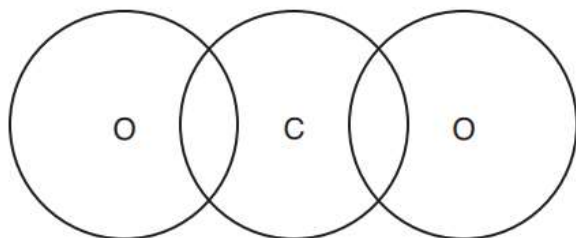


Fig. 2.3

[2]

13 Fig. 13.1 shows a diagram of the alimentary canal and associated organs.

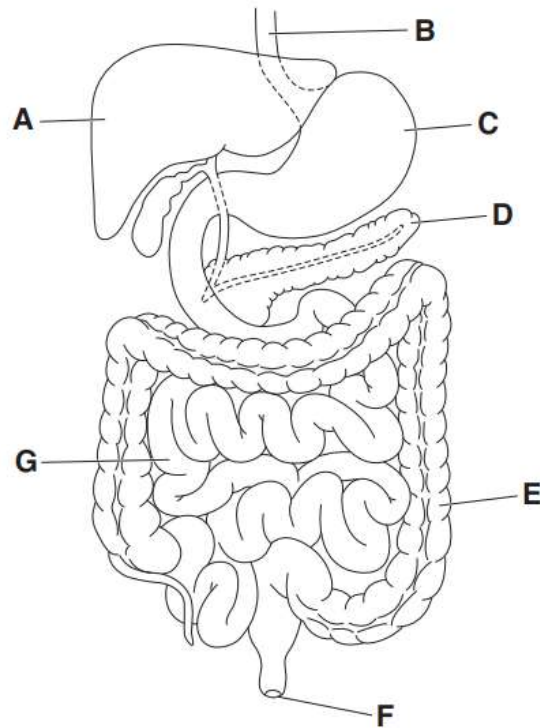


Fig. 13.1

- (a) State the letter in Fig. 13.1 that identifies the
liver,
- pancreas.

[2]

- (b) When a person eats a meal, the concentration of glucose in their blood increases. The pancreas detects this increase.

Describe how the pancreas **and** the liver bring the concentration of glucose back to normal.

.....

.....

.....[2]

Total Marks = 32