Reproduction

Question Paper 2

Level	IGCSE
Subject	Biology
Exam Board	CIE
Topic	Reproduction
Sub-Topic	
Paper Type	Alternative to Practical
Booklet	Question Paper 2

Time Allowed: **51 minutes**

Score: **/42**

Percentage: **/100**

1 Fig. 2.1 shows an insect-pollinated flower which has been cut vertically.

Fig.2.1

(a) Make a large, labelled drawing of the visible floral parts.

[6]

Fig. 2.2 shows the structure of a wind-pollinated flower.

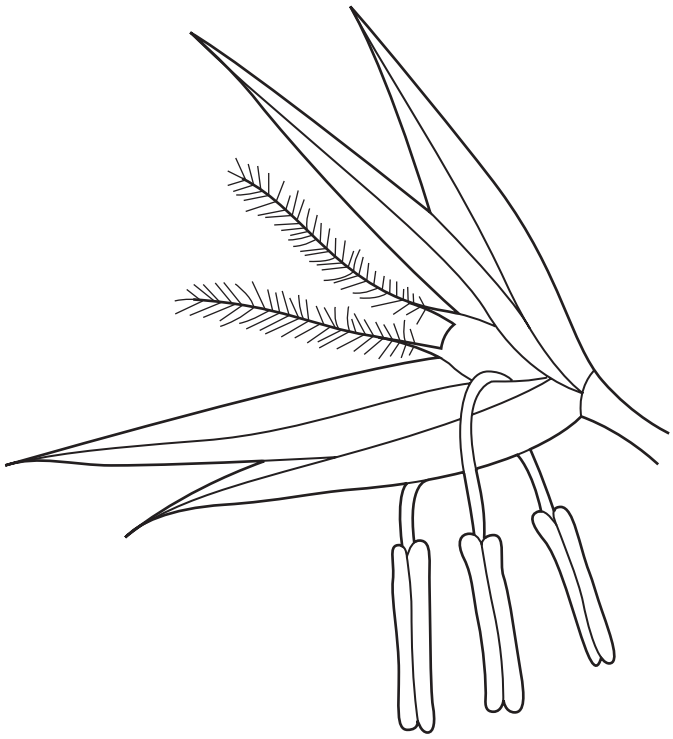

Fig. 2.2

(b) Label the visible floral parts of Fig. 2.2.
Explain how each floral part is adapted for this type of pollination.

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.....

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.....

..... [3]

(c) **(i)** State **one** similarity in the adaptations for pollination of the flowers shown in Fig. 2.1 and Fig. 2.2.

.....

..... [1]

(ii) Complete Table 2.1 to show four differences in the adaptations for pollination of the flowers shown in Fig. 2.1 and Fig. 2.2.

Table 2.1

	Fig. 2.1	**Fig. 2.2**
difference 1	....	....
difference 2	....	....
difference 3	....	....
difference 4	....	....

[4]

[Total: 14]

2 Pollen grains start to germinate when they land on a suitable stigma and produce a pollen tube. Fig. 3.1 shows a single carpel from a flower with a germinating pollen grain.

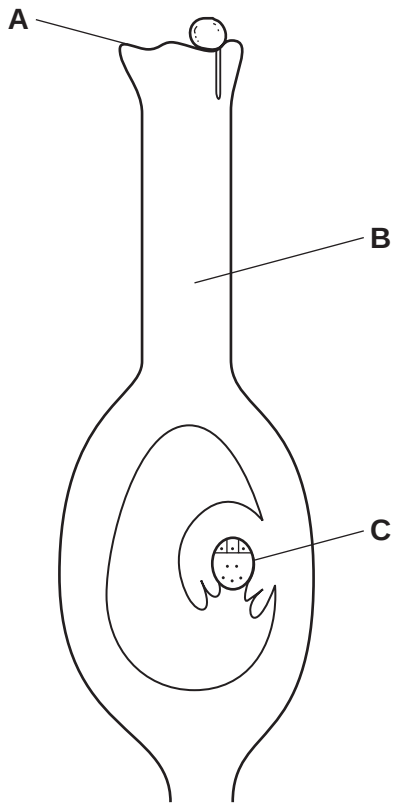

Fig. 3.1

(a) (i) Identify the structures labelled **A**, **B** and **C**.

A .....

B .....

C ..... [3]

(ii) Draw a line on Fig. 3.1 to continue the path taken by the pollen tube until it enters structure **C**.

[1]

(b) (i) Measure the diameter of the pollen grain shown in Fig. 3.1 and the approximate distance the pollen tube grows to reach and enter structure **C**.

Diameter of pollen grain ..... mm

Distance grown ..... mm [1]

(ii) How many times greater is the distance grown by the pollen tube than the diameter of the pollen grain?

..... times greater [2]

[Total: 7]

3 An active yeast culture is placed in a test-tube. This test-tube is connected by a delivery tube to a second test-tube containing hydrogencarbonate indicator shown in Fig. 2.1.

Hydrogencarbonate indicator changes colour according to pH. In alkaline solutions the indicator becomes purple and in acidic solutions the indicator becomes yellow.

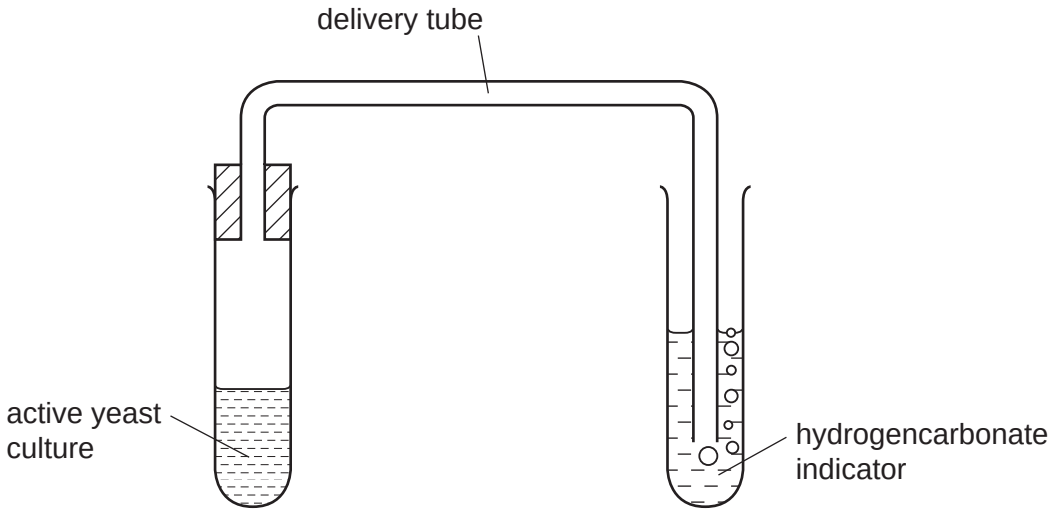

Fig. 2.1

At the start of the experiment the indicator is red in colour. After 15 minutes the indicator becomes yellow.

(a) Explain the reason for this colour change.

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..... [3]

(b) Describe how you would collect and measure the volume of gas given off per minute by 20 cm^3 of the active yeast culture.

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.....

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..... [6]

(c) Fig. 2.2 shows a yeast cell reproducing asexually.

Fig. 2.2

(i) Make a labelled drawing of the yeast cells.

[3]

(ii) Measure the diameter of the yeast cell in Fig. 2.2 between **X** and **Y**.

diameter (distance between **X** and **Y**) .....

Calculate the magnification of your drawing. Show your working.

magnification ..... [3]

[Total: 15]

4 Fig. 3.1 shows cells dividing to form gametes.

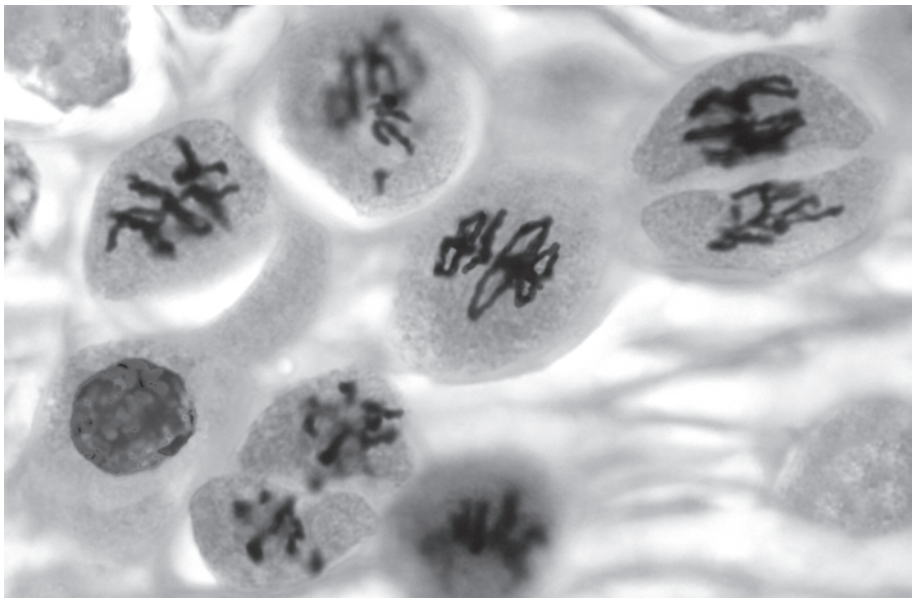

Fig. 3.1

(a) Label on Fig. 3.1

(i) a chromosome,
(ii) cytoplasm,
(iii) a nucleus. [3]

(b) Name where such dividing cells can be found,

(i) in a plant,

..... [1]

(ii) in a mammal.

..... [1]

(c) Suggest the importance of this type of division in the formation of gametes.

.....

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..... [1]

[Total:6]