

Reproduction

Question Paper 2

Level	IGCSE
Subject	Biology
Exam Board	CIE
Topic	Reproduction
Paper Type	(Extended) Theory Paper
Booklet	Question Paper 2

Time Allowed: 54 minutes

Score: /45

Percentage: /100

1 The menstrual cycle involves monthly changes in the ovary and the uterus.

(a) Fig. 5.1 shows the sequence of changes within the ovary that occur during the menstrual cycle.

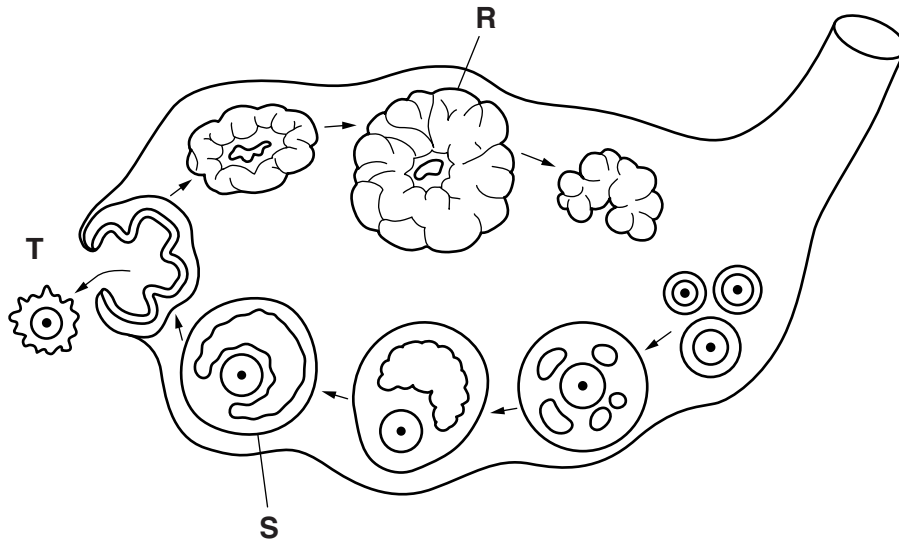


Fig. 5.1

(i) Name structures **R** and **S**.

R

S

[2]

(ii) State the name of the process that is occurring at **T**.

.....[1]

(b) The ovary secretes hormones that control the growth and maintenance of the lining of the uterus.

Name the hormone that stimulates:

(i) the growth of the lining of the uterus during the first half of the menstrual cycle

.....[1]

(ii) the maintenance of the lining of the uterus during the second half of the menstrual cycle.

.....[1]

- 2 Fig. 5.1 is a diagram showing the events from pollination to fertilisation in a species of flowering plant.

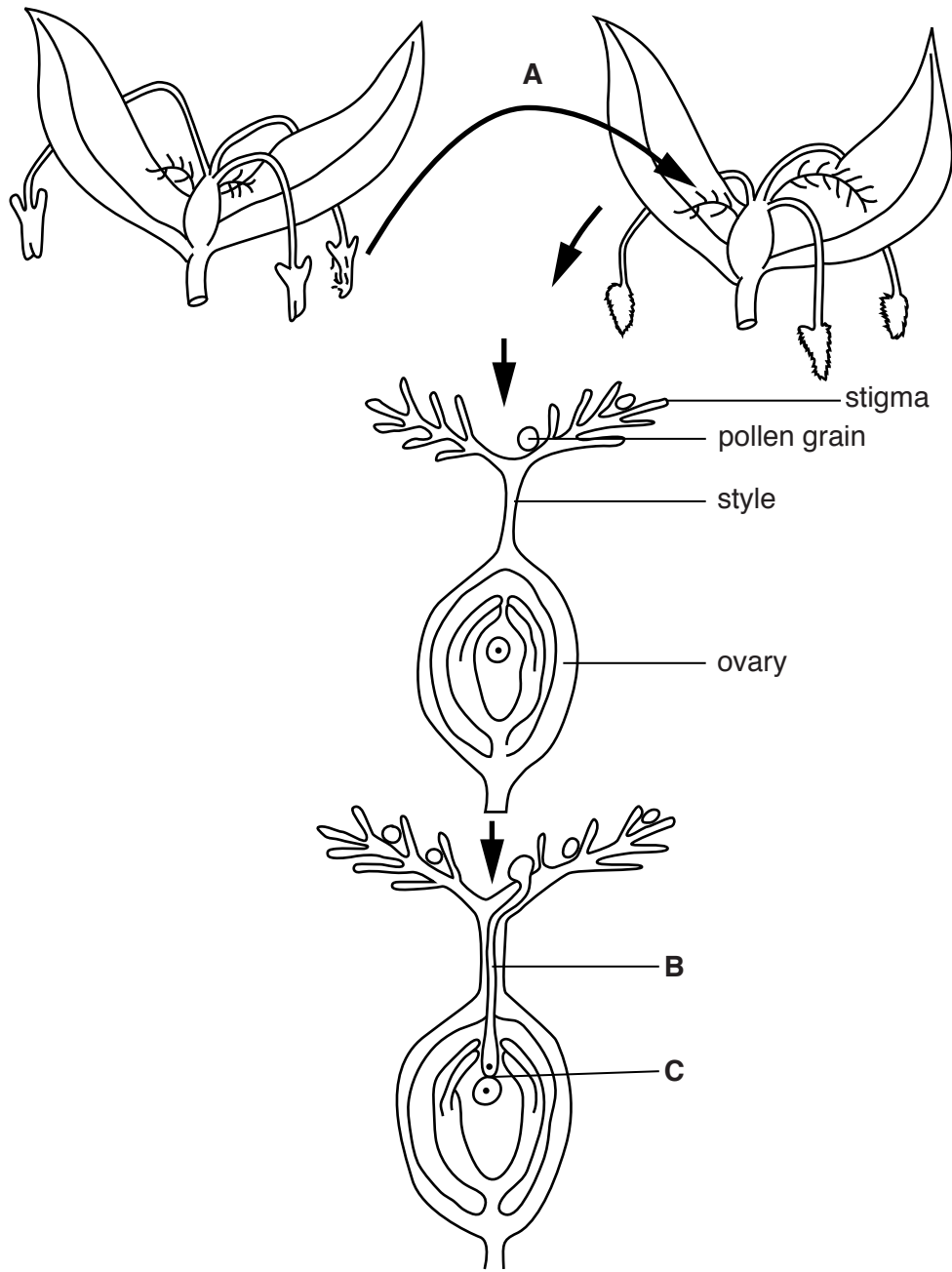


Fig. 5.1

- (a) Name the likely method of pollination for the flowers shown at **A** in Fig. 5.1. Give an explanation for your choice.

method of pollination

explanation

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.....

.....

(b) In Fig. 5.1 pollen is transferred from one plant to another.

State the name for this type of pollination.

.....[1]

(c) Name structure **B** shown in Fig. 5.1 and state its function.

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.....[2]

(d) Fertilisation occurs at **C** as shown in Fig. 5.1.

Describe what happens at fertilisation in flowering plants.

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.....[2]

(e) Seed formation occurs after fertilisation. Seeds are formed inside the fruits and then dispersed.

(i) Name the part of the flower that develops into the seed.

.....[1]

(ii) Name the part of the flower that develops into the fruit.

.....[1]

(iii) State an advantage of seed dispersal.

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.....[1]

(f) Seed germination occurs when conditions are suitable.

Explain the role of enzymes in seed germination.

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.....[2]

[Total: 13]

3 Bacteria can be grown on nutrient agar in Petri dishes. The main nutrients in the agar are glucose and amino acids. The bacteria reproduce asexually to form colonies. Each colony is formed from one bacterium.

(a) (i) Explain why glucose and amino acids are included in the agar medium.

glucose

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amino acids

.....

[2]

(ii) Describe how bacteria reproduce asexually.

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.....[2]

A microbiologist collected bacteria from a kitchen which was suspected to be responsible for an outbreak of food poisoning.

The microbiologist spread the bacteria on nutrient agar and let them reproduce to form colonies. The bacterial colonies were transferred onto new nutrient agar that contained high concentrations of antibiotics **S** or **T**, as shown in the flow diagram in Fig. 5.1.

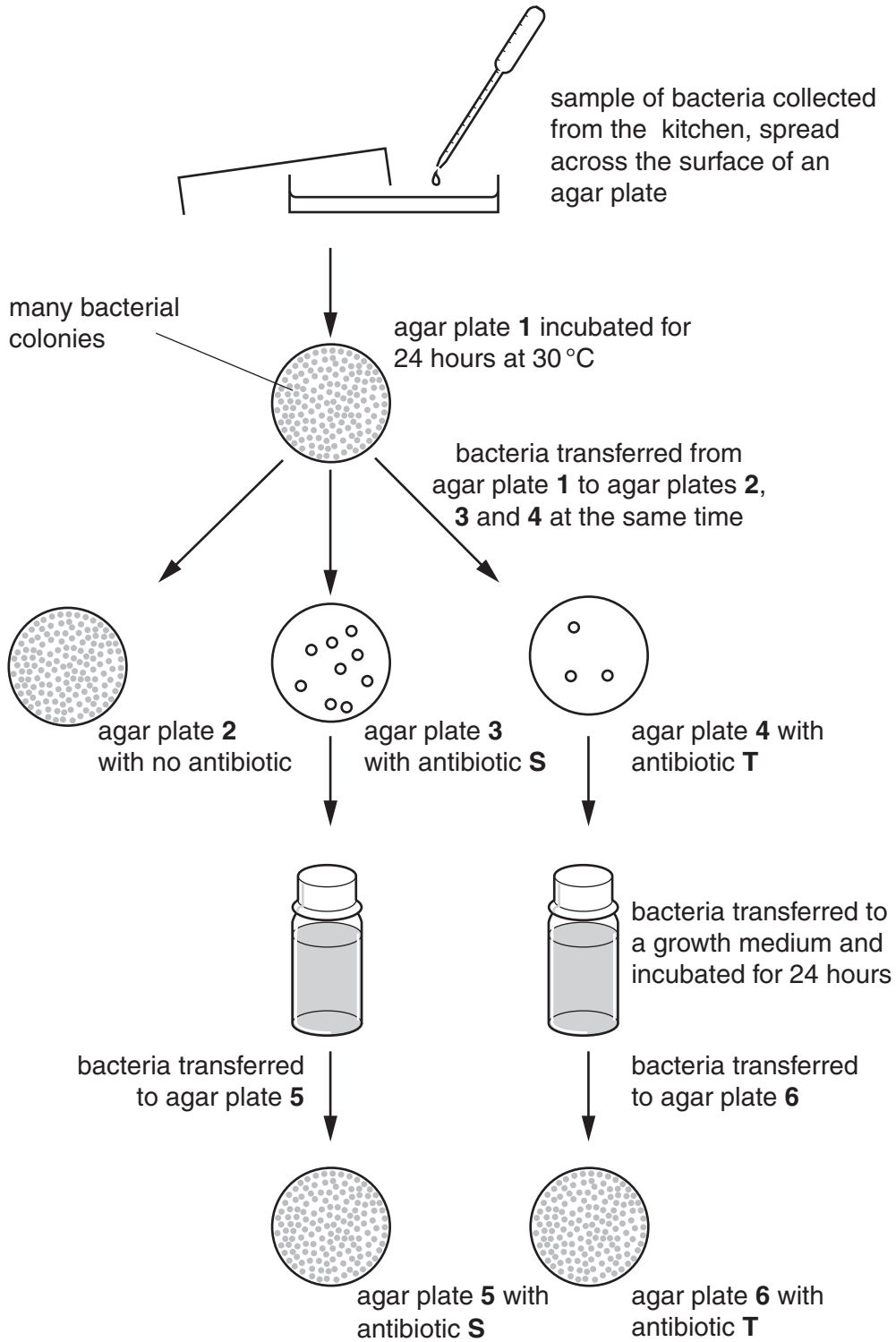


Fig. 5.1

(b) Explain the appearance of agar plates 3 and 4.

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.....[2]

(c) Explain why many bacterial colonies were found on agar plates 5 and 6.

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.....[2]

(d) Gonorrhoea is a sexually transmitted disease. It is caused by the bacterium, *Neisseria gonorrhoeae*. Many strains of this bacterium cannot be treated by common antibiotics.

Explain how strains of antibiotic-resistant bacteria are formed **and** then spread.

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.....[5]

[Total: 13]