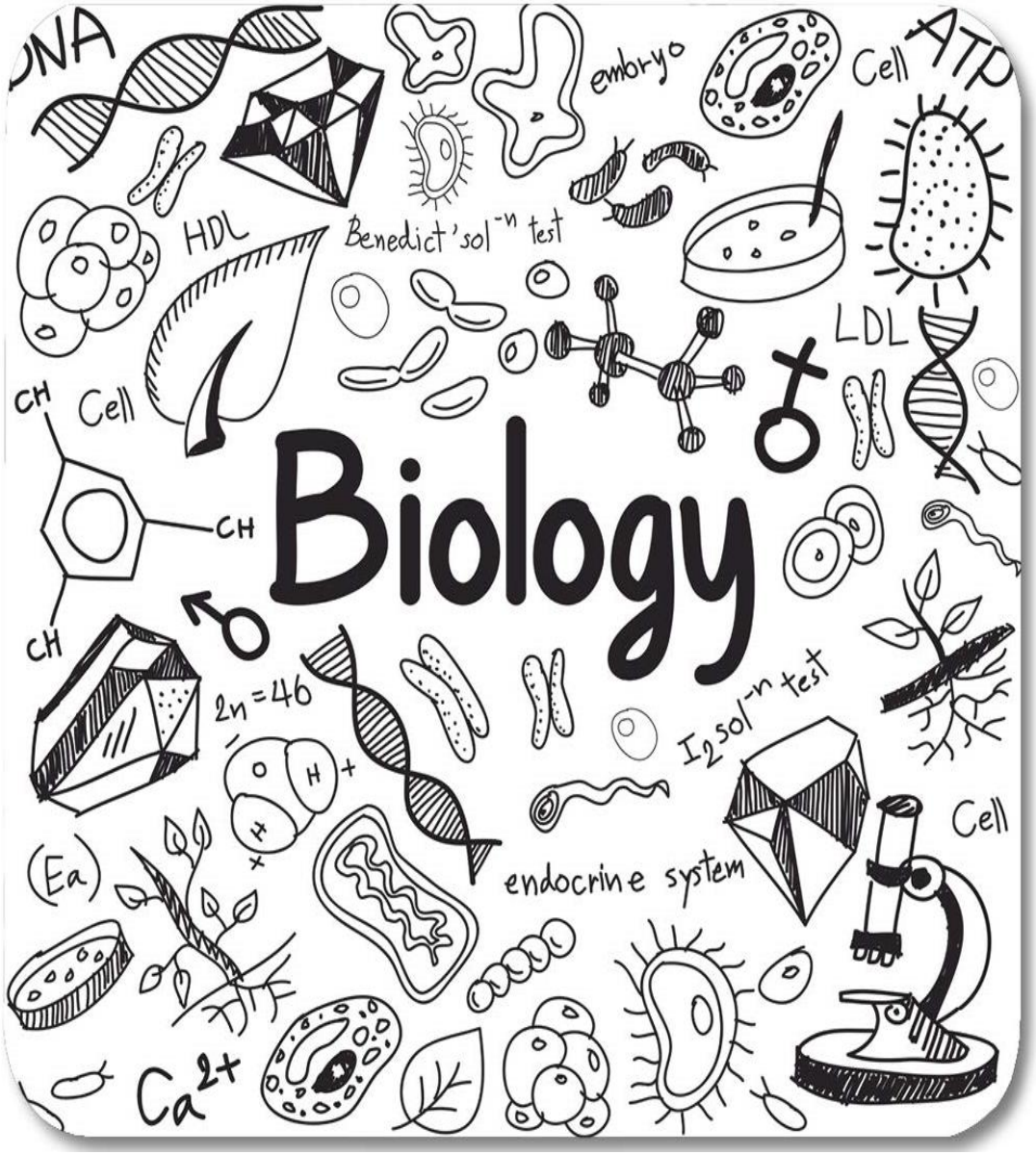
The National Orthodox School Shmaisani

Lesson: Pollination

Scholastic Year: 2022-2023

Grade: 8 CS



Accredited by

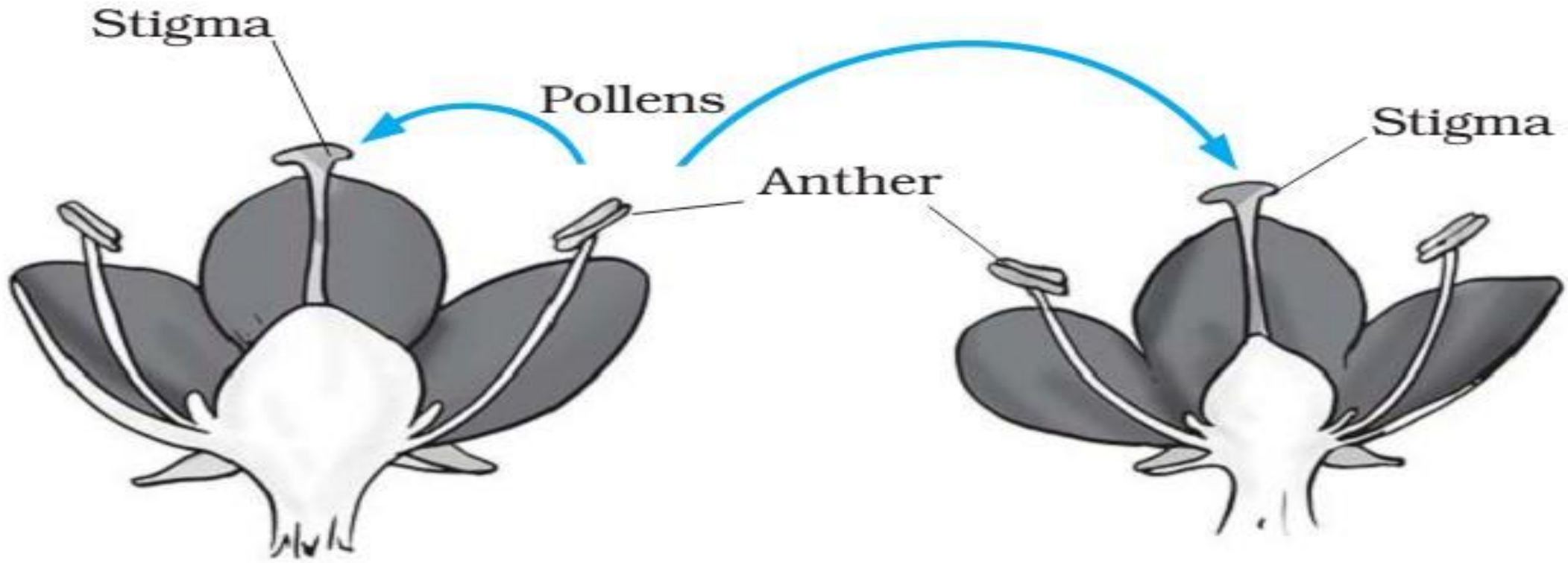
Objective :

- Compare between insect pollinated flowers and wind pollinated flowers
- Compare between self pollination and cross pollination .

Resources : book page 166 – 167

Work book page 72

Compare between self pollination and cross pollination .



Pollination in flower

Self pollination	Cross pollination
It is the transfer of pollen grains from anther to stigma of the same flower or another flower born on the same plant	It is the transfer of pollen grains from the anther of one flower to the stigma of another flower the born on a different plant of the same species.
It does not require any external agency	An external agency (wind , water , insects) is always required
It can occur even when the flower is closed	It only occurs when the flower is open
Does not introduce any variations	Introduce variations

13.5 Flowers

Objectives

- Recognise each part of a flower and describe its function
- Understand how pollination and fertilisation take place
- Distinguish between insect-pollinated and wind-pollinated flowers

Reproductive organs

Flowers contain male and female sex organs. They let plants reproduce by making seeds.

Seed development begins when a male sex cell fertilises a female sex cell. Some plants produce male and female sex cells in separate flowers. Others have their male and female sex organs in the same flowers.

This flower contains both male and female organs.

The male parts of a flower

The male parts of a flower are called **stamens**. The most important part of a stamen is its **anther**. This produces **pollen** which carries the male sex cell. Each anther has a **filament** to hold it in a good position to spread its pollen.

The female parts of a flower

The female part of a flower is called a **carpel**. At the base of each carpel there is an **ovary**. This produces **ovules** which contain female sex cells. Above the ovary is a sticky **stigma** which catches pollen. The **style** separates the stigma from the ovaries.

Pollination

Male and female sex cells are called **gametes**. To bring them together, pollen needs to be moved from a stamen to a stigma. This is **pollination**.

(1) Many flowers can self-pollinate. This happens when pollen moves to a stigma in the same flower, or a stigma in another flower on the same plant. For the long-term future of the species, (2) cross-pollination is better. This means the pollen moves to the stigma of a flower on another plant. It gives the plants' offspring a greater variety of characteristics.

Self-pollination occurs when pollen land on the stigma in the same flower or on the same plant.

To stop self-pollination happening, flowers can produce their male and female gametes at different times.

Bees transfer pollen as they collect nectar from each flower.

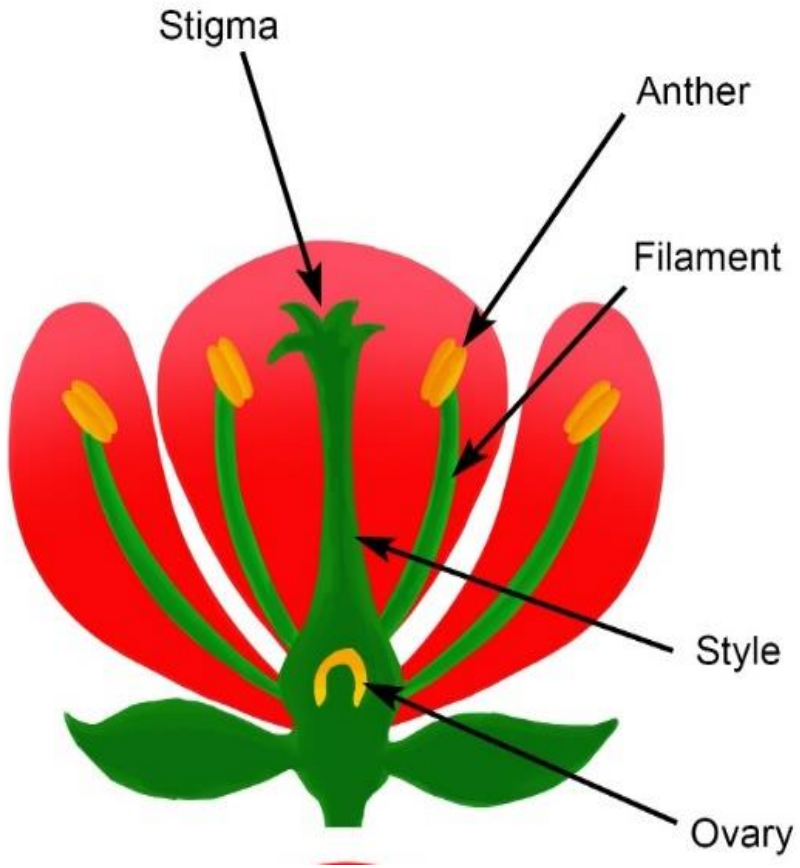
Using insects

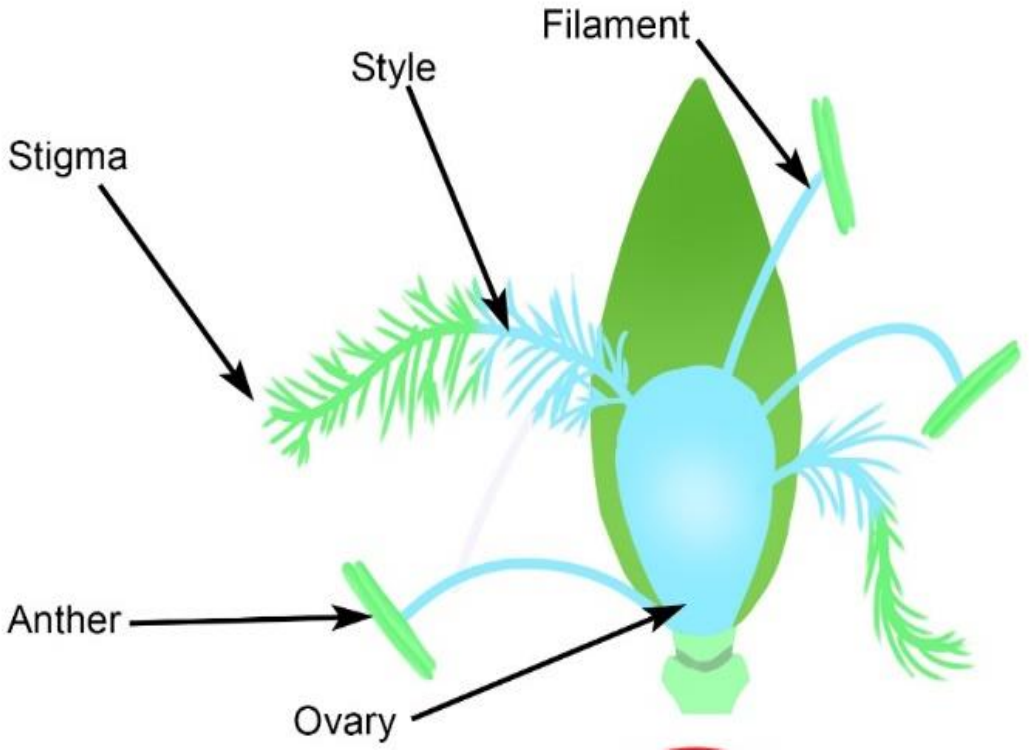
Many flowers use ins[illegible]s to spread their pollen. They use scents, coloured petals, and suga[illegible]t the bees.

When a bee visits a flower it gets [illegible] sticky pollen grains. As it moves from flower to flower, it leaves this poll[illegible]heir stigmas.

From study sheet

Compare between insect pollinated flowers and wind pollinated flowers in the table below :





INSECT POLLINATED FLOWER	WIND POLLINATED FLOWER

Insect pollination	Wind pollination
Have a scent	No scent
Sticky, spiky pollen	Large amounts of light pollen
Sticky stigma inside flower	Feathery stigmas hang outside the flower
Stamens surrounded by petals	Large stamens hang outside flower
Produce nectar	Don’t produce nectar
Petals large & bright	Petals small & dull

Text book page 167

Q2.The answer is in the study sheet : Pollination (table)

Q3.

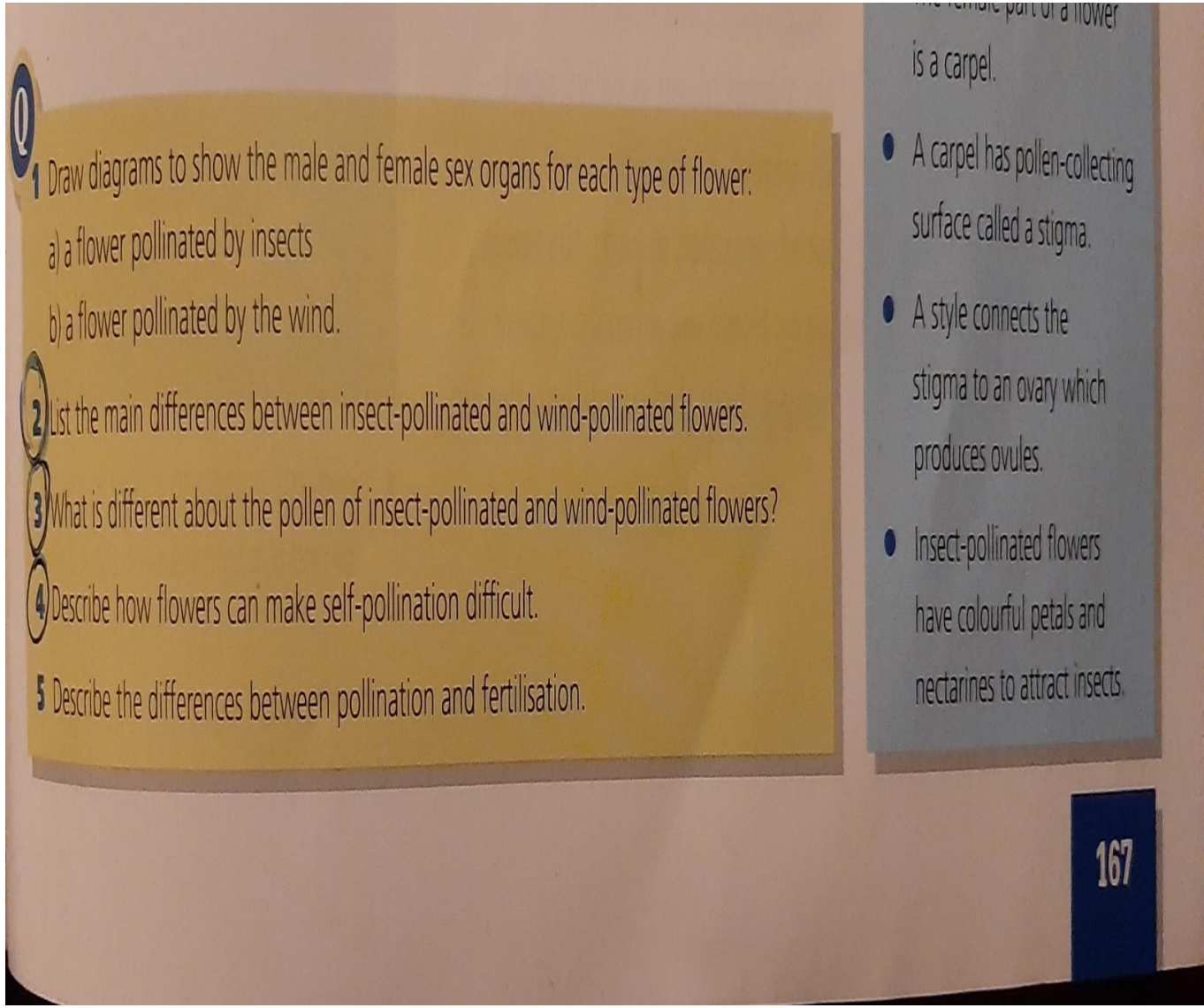
Insect pollinated **wind pollinated**

Sticky, spiky pollen	Large amounts of light pollen

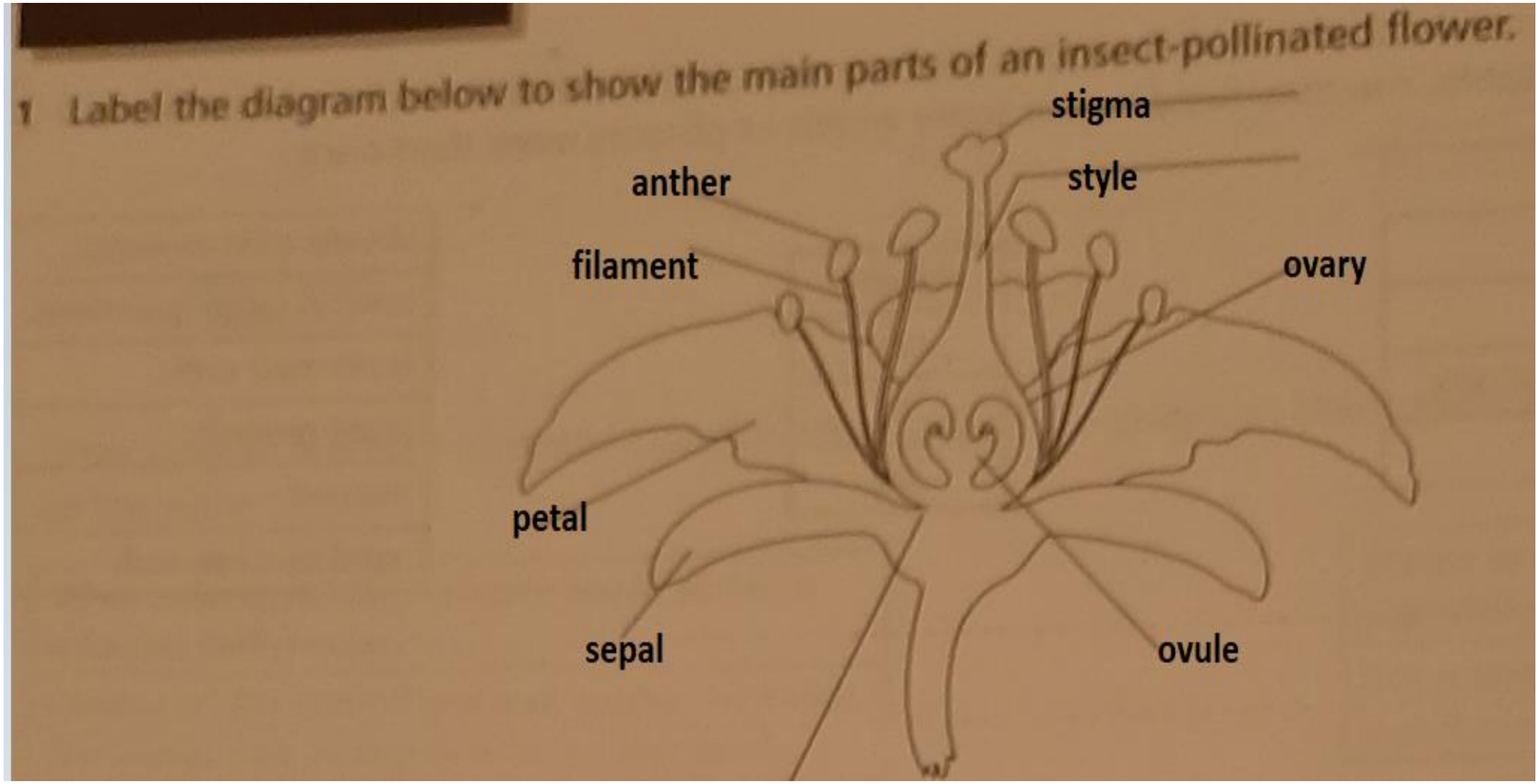
Q4. Flowers can make self-pollination difficult by producing their male and female gametes at different times

Q5. **Pollination** : the transfer of pollens from the anther to the stigma .

Fertilization : the fusion between the male gamete nucleus and the female gamete nucleus.

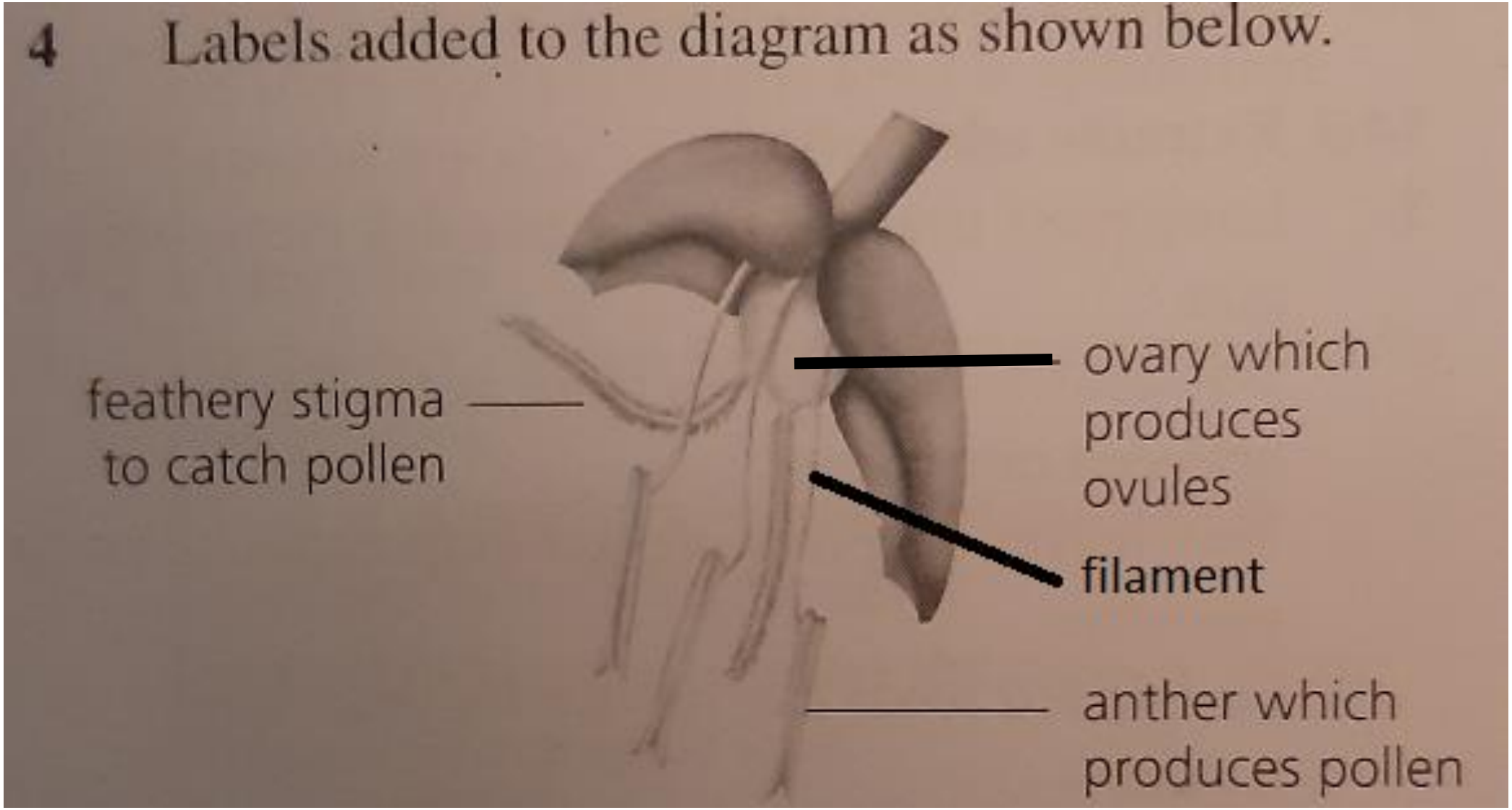


Workbook page 72 / Q1.



Workbook page 72 / Q4

4 Labels added to the diagram as shown below.



Workbook page 72/ Q2

2 Name each of the following parts:

a Where ovules containing female sex cells are produced — ovary

b Where pollen containing male sex cells is produced — anther

c Where the pollen has to land for pollination to take place — stigma

d The structure a pollen tube grows down to reach an ovule — style

e The part that forms a seed after fertilisation — ovule

f The part that forms a fruit after fertilisation — ovary