

Year 12

Biology General

Task 2 Reproduction in flowering plants

Miss Cunningham

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Total Marks: 24

Your Mark: \_\_\_\_\_\_\_\_\_\_

Percentage: \_\_\_\_\_\_\_\_\_

Weighting 5%

Task 1: Gather a flower from around the school.

1. Make a stretch (cross section) and label the parts (10 marks)

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| 1 mark accurate drawing  1 mark flower name/title  1 mark label stigma  1 mark label anther  1 mark label filament  1 mark label style  1 mark label petal  1 mark label ovum  1 mark label sepal  1 mark label ovary |

Task 2: Make a pollen slide from the plant specimen. (8 marks)

The technique is described below:

(a) Take a small cube of the pre-made pollen jelly (2–3 mm3) in a pair of tweezers and brush it back and forth over the ripe stamens of one type of flower. Look closely at the cube of pollen jelly; you should see that it is covered with fine dust.

(b) Place the pollen-coated jelly on a microscope slide and place a cover slip on top.

(c) Using a lighted match, warm the base of the microscope slide just enough so that the jelly begins to melt.

(d) Immediately remove the match and let the slide cool. The pollen grains will be firmly lodged within the jelly, between the microscope slide and the cover slip.

(e) Remove any soot from the bottom of the slide with a damp tissue.

(f) Label each slide from your six species with the following details:

* plant name (genus and species names, e.g. *Eucalyptus erythrocorys*)
* collector’s name
* date collected.

Task 2 Marking Key

Labels (3 marks) 1 per label

* Name
* Date
* Plant Name

Slide construction (1 – 5 marks based on clarity when viewed through microscope and overall construction).

5 marks

* Slide clearly visible through microscope
* Pollen jelly melted
* Cover slip level
* No distinguishable error in collecting the specimen

2 -4

* Slide visible under microscope
* Cover slip not level
* Pollen not melted

0 -1

* Slide not visible under microscope.
* Mistakes clearly evident in construction of slide.

Task 3: Using each of the slides you have made, study them under the microscope, then draw labelled of the pollen grains. (6 marks)

On your diagram, clearly indicate:

* the scientific name of the plant from which the pollen was taken
* the magnification at which the pollen was observed under the microscope
* the dimensions of the pollen grains in micrometres
* any identifiable features (shape, texture, special features).

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| Title (Scientific name) - 1 mark  Scientific Drawing (must be accurate) – 1 mark  Magnification at viewing – 1 mark  Measurement of the pollen grain (must be realistic) (between 75um and 150 um) – 1 mark  1-2 marks for details of identifiable features. (Max 2 marks) |