Unit 10 · Angiosperms

WORKSHEET

Full marks 39

Name _____ Class _____ Roll no. _____ Date _____ Marks _____ / 39

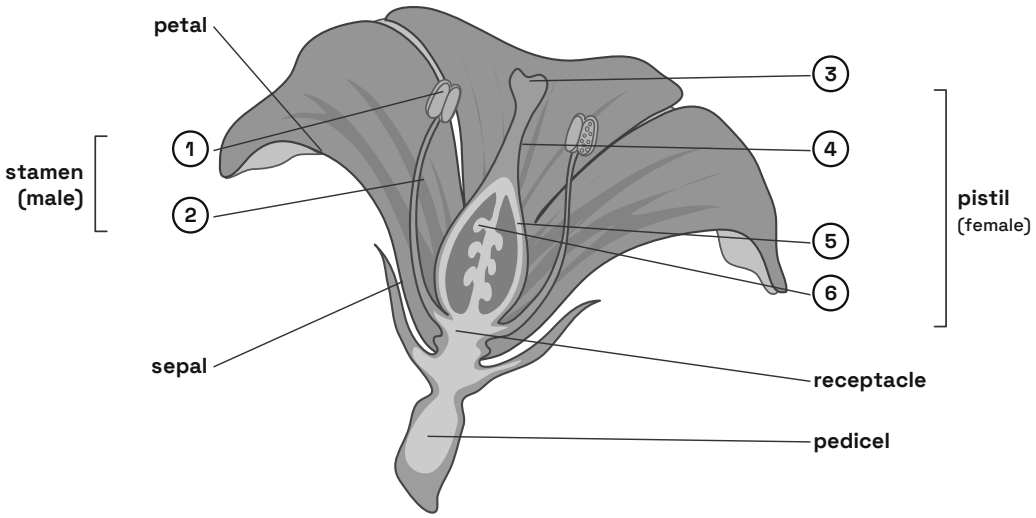
1 Key words [4]

Match each term in column A with its description in column B. Two items in column B are not needed. Each match carries 0.5 mark.

Column A		Column B
1. phyllotaxy	☐	**a.** a fruit formed without fertilization, with no seeds
2. aestivation	☐	**b.** the arrangement of ovules inside the ovary
3. placentation	☐	**c.** leaves on a stem arranged in pairs, each pair at right angles to the one below
4. tetradynamous	☐	**d.** stamens attached to the petals
5. diadelphous	☐	**e.** a cluster of fruitlets from one flower's free carpels
6. epipetalous	☐	**f.** the false septum of a mustard ovary
7. etaerio	☐	**g.** the arrangement of sepals or petals in the bud
8. replum	☐	**h.** the arrangement of leaves on a stem or branch
		i. six stamens, two short and four long
		j. stamens joined by their filaments into two bundles

2 Label the diagram [3]

The diagram shows a typical flower cut in half. Write the names of the parts 1 to 6. Each carries 0.5 mark.



1. _____ **2.** _____

3. _____ **4.** _____

5. _____ **6.** _____

3 Multiple choice [5]

Choose the correct option for each of the following questions.

i. Name the taxon formed by grouping related orders. [1]

a. family **b.** genus

c. class **d.** phylum

ii. What type of placentation is characteristic of the family Solanaceae? [1]

a. axile **b.** basal

c. parietal **d.** marginal

iii. How can you tell that a potato is a stem and not a root? [1]

a. it grows under the ground

b. it stores food

c. it has “eyes”, buds in the axils of tiny scale leaves, at its nodes

d. it has no chlorophyll

iv. A leaf has a rachis bearing nine leaflets, with one leaflet at its tip. What kind of leaf is it? [1]

a. simple **b.** palmately compound

c. paripinnately compound **d.** imparipinnately compound

v. In an apple blossom, the dried sepals end up at the top of the fruit, opposite its stalk. What is the position of the ovary? [1]

a. superior: the flower is hypogynous **b.** half-inferior: the flower is perigynous

c. inferior: the flower is epigynous **d.** it can’t be told from the fruit

4 Very short answers [3]

Write very short answers to the following questions.

a. Who is called the father of taxonomy? [1]

b. What is a fruit? [1]

c. How can you tell a leaflet of a compound leaf from a whole simple leaf? [1]

5 Short answers [9]

Write short answers to the following questions.

a. Differentiate between racemose and cymose inflorescence, with one example of each. [2]

b. Why is a strawberry called a false fruit, while a mango is a true fruit? [2]

c. A flower has the floral formula Ebr $\oplus$ ⚥ $K_{2+2}\ C_4\ A_{2+4}\ G\underline{2}$. Write in words what it tells you about the flower, and name its family. [2]

d. Describe the four regions of a root tip. [3]

6 Numerical problems [4]

Solve the following problem. Show your working.

In 1937 Howard Dittmer grew one rye plant for four months. It had about 13 million roots, 620 km long in all, and about 14 billion root hairs, about 10,000 km long in all. i. Find the average length of one root, in cm. ii. Find the average length of one root hair, in mm. iii. How many times longer were all the hairs together than all the roots? iv. In which region of the root do these hairs grow, and what do they do for the plant?

Answer: _____

7 Long answers [8]

Write long answers to the following questions.

a. Describe the floral characters of the family Fabaceae, with its floral formula. **[4]**

b. You are given a cut tomato, an opened pea pod and a cut cucumber. For each, name the placentation and describe what you would see. Which of the three came from an inferior ovary, and how could you tell? **[4]**

8 Think [3]

Onion, garlic, asparagus, aloe and the lily were put in one family, Liliaceae, but DNA now places them in four families. Explain why they were first grouped together, what kind of classification moved them, and why botanists now prefer it.

9 Activity: Open a fruit (not marked)

Ask an adult to help you cut a tomato, a cucumber and an orange across with a kitchen knife, and open a pea pod along its seam.

Fruit	Chambers	Where the seeds are attached	Placentation	Sepals at the stalk end or the far end?
tomato				
pea				
cucumber				
orange				

Which layer of the pericarp do you eat in each?