Unit 8 · Pteridophyta

WORKSHEET

Full marks 32

Name _____ Class _____ Roll no. _____ Date _____ Marks _____ / 32

1 Key words [4]

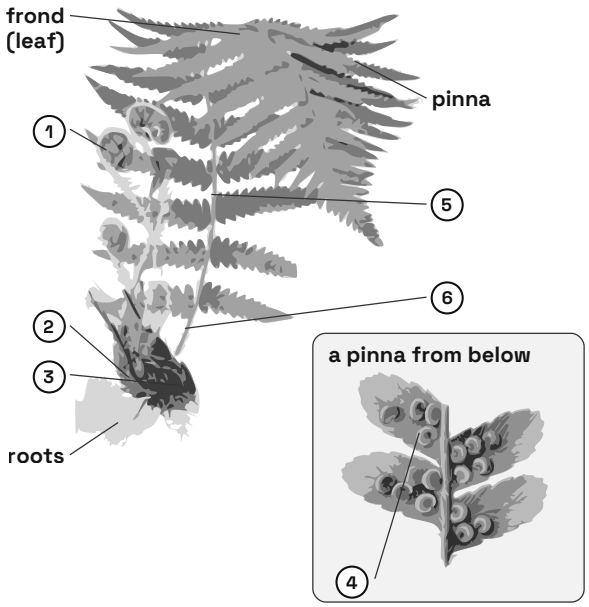
Fill in the blanks with words from the box. Two words in the box are not needed. Each blank carries 0.5 mark.

circinate	**cryptogams**	**frond**	**heterosporous**	**indusium**	**prothallus**	**ramenta**	**rhizoid**
seta	**sori**						

Pteridophytes have xylem and phloem but make no seeds, so they are called vascular _____. A fern leaf is called a _____. The brown, papery scales on the rhizome of *Dryopteris* are the _____. A young fern leaf, rolled up from the tip downwards, is _____. The sporangia of a fern are grouped in _____ on the lower surface of the pinnae. Each sorus is covered by a kidney-shaped flap, the _____. The gametophyte of a fern, small, green and heart-shaped, is the _____. Plants such as *Selaginella* and *Marsilea*, which make microspores and megaspores, are _____.

2 Label the diagram [3]

The diagram shows the sporophyte of *Dryopteris*. 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. In a fern, which cell has two nuclei? [1]

a. the egg
b. the venter canal cell
c. the neck canal cell
d. the spore mother cell

ii. How many spores does one sporangium of *Dryopteris* usually give? [1]

a. 4 to 8
b. 12 to 16
c. 48 to 64
d. several thousand

iii. In a fern, which of these is haploid? [1]

a. the frond
b. the prothallus
c. a spore mother cell
d. the zygote

iv. What draws the antherozoids of a fern to the archegonium? [1]

a. light falling on the neck
b. malic acid in the mucilage oozing from its neck
c. the rhizoids, which pull them in
d. the wind blowing them to the egg

v. Which pteridophyte is grown in rice fields as a biofertilizer? [1]

a. *Dryopteris*
b. *Lycopodium*
c. *Equisetum*
d. *Azolla*

4 Short answers [9]

Write short answers to the following questions.

a. Why are pteridophytes called vascular cryptogams? [2]

b. Differentiate between homosporous and heterosporous pteridophytes, with one example of each. [2]

c. Write any two differences between the gametophyte of a fern and that of *Marchantia*. [2]

d. How does the annulus throw the spores out of a fern sporangium? **[3]**

5 Long answer **[8]**

Write a long answer to the following question.

a. Describe the alternation of generations in *Dryopteris*. Which generation is dominant, and how is this the reverse of the bryophytes? **[4]**

b. Describe the structure and function of the prothallus of a fern. **[4]**

6 Think **[3]**

A fern grows well in a pot in a dry, sunny room, but no new fern plants ever appear in the pot. On a damp, shady stream bank many young ferns come up among the old ones. Explain why.

7 Activity: Look under a fern leaf

(not marked)

Find a fern with brown dots on the underside of its leaves (by a stream, a damp wall or a garden pot). Look at a pinna from below with a hand lens. Then put a fertile pinna on a sheet of white paper, under a lamp, for half an hour, and look at the paper again.

What you looked at	What you saw
the young leaves at the top of the rhizome	
the stalk and the scales on it	
a sorus under the hand lens	
the paper under the pinna after half an hour	

Where else would you look for the tiny heart-shaped prothalli of this fern?