Root Anatomy

ROOT ANATOMY

ROOT CAP
DERMAL TISSUE
PROTOTERM
EPIDERMIS
FUNDAMENTAL TISSUES
GROUND MERistem
Cortex
CORTEX PARENChymA
ENDODERMIS
VAScULAR TISSUES
PROCAMBIUM
PERICYCLE
PRIMARY PHLOEM
PRIMARY XYLEM
VASCULAR CAMBIUM
SECONDARY PHLOEM
SECONDARY XYLEM

Diagram from The Botany Coloring Book (1982) by Paul Young

Work: 5 points
Follow the directions below to color-code the diagram and to answer the questions. You can use p.374-375 of your textbook to help you. Use colored pencils, and check off each box ☐ as you finish that part of the instructions.

For this exercise, you will be identifying various parts of a plant root, and connecting their structure (body part) to their function (job). The root structure of plants is usually found underground, and its function is to supply the plant with what it needs to survive. Roots absorb water and minerals from the surrounding soil. They hold the plant firmly in the soil. They also store extra food for the plant that was made during photosynthesis.

Carefully color the letters of title ROOT ANATOMY in black ☐. You are probably used to hearing the term anatomy applying only to human body parts. Well, it applies to animal and plant parts, too. If you are studying anatomy, you are studying the structures found in organisms, and learning about the functions of those parts.

In the list of terms down the left side of the paper, find DERMAL TISSUE, and carefully color the letters light brown or tan ☐. Also, color the terms PROTODERM and EPIDERMIS light brown or tan as well ☐. All of these structures are basically the “skin” of the root. Now, using light brown or tan again, color any part of the diagram labeled with a B ☐, B1 ☐, or E ☐. Don’t forget the root hairs!

1. What are the two functions of the epidermis and root hairs? Hint: reread p.375.
   1 —
   2 —

In the list of terms, find ROOT CAP, and carefully color the letters orange ☐. Now use orange again to color any part of the diagram labeled with an A ☐.

2. Roots grow at their tips. What is the function of the root cap? Hint: reread p.375.

Roots are filled with structures called vascular tissue. These are like little pipes that carry materials from one part of the plant to another. There are two types of vascular tissue, xylem and phloem. In the list of terms, find PRIMARY XYLEM and SECONDARY XYLEM. Use purple to color just the word XYLEM for each of those terms ☐. Now, using purple again, color any part of the diagram labeled with a J ☐ or J1 ☐.


In the list of terms, find PRIMARY PHLOEM and SECONDARY PHLOEM. Use blue to color just the word PHLOEM for each of those terms ☐. Now, using blue again, color any part of the diagram labeled with a I ☐ or I1 ☐.


Work: 5 points