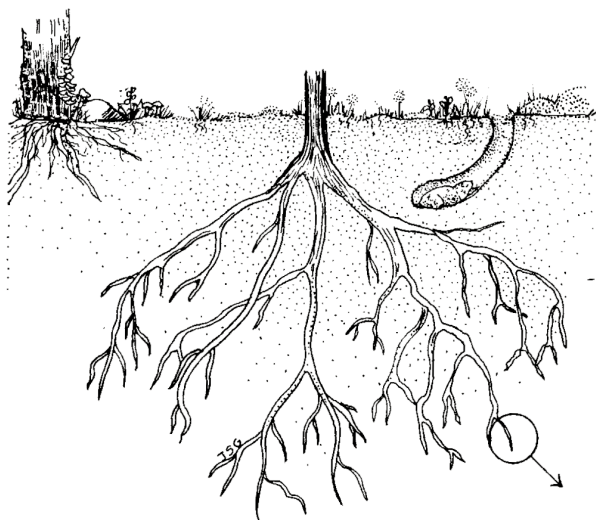


ROOT ANATOMY



ROOT CAP_A
 DERMAL TISSUE:
 PROTODERM_{B'}
 EPIDERMIS_E
 FUNDAMENTAL TISSUES:
 GROUND MERISTEM_{C'}
 CORTEX ★
 CORTEX PARENCHYMA_F
 ENDODERMIS_G
 VASCULAR TISSUES:
 PROCAMBIUM_{D'}
 PERICYCLE_H
 PRIMARY PHLOEM_I
 PRIMARY XYLEM_J
 VASCULAR CAMBIUM_K
 SECONDARY PHLOEM_{I'}
 SECONDARY XYLEM_{J'}

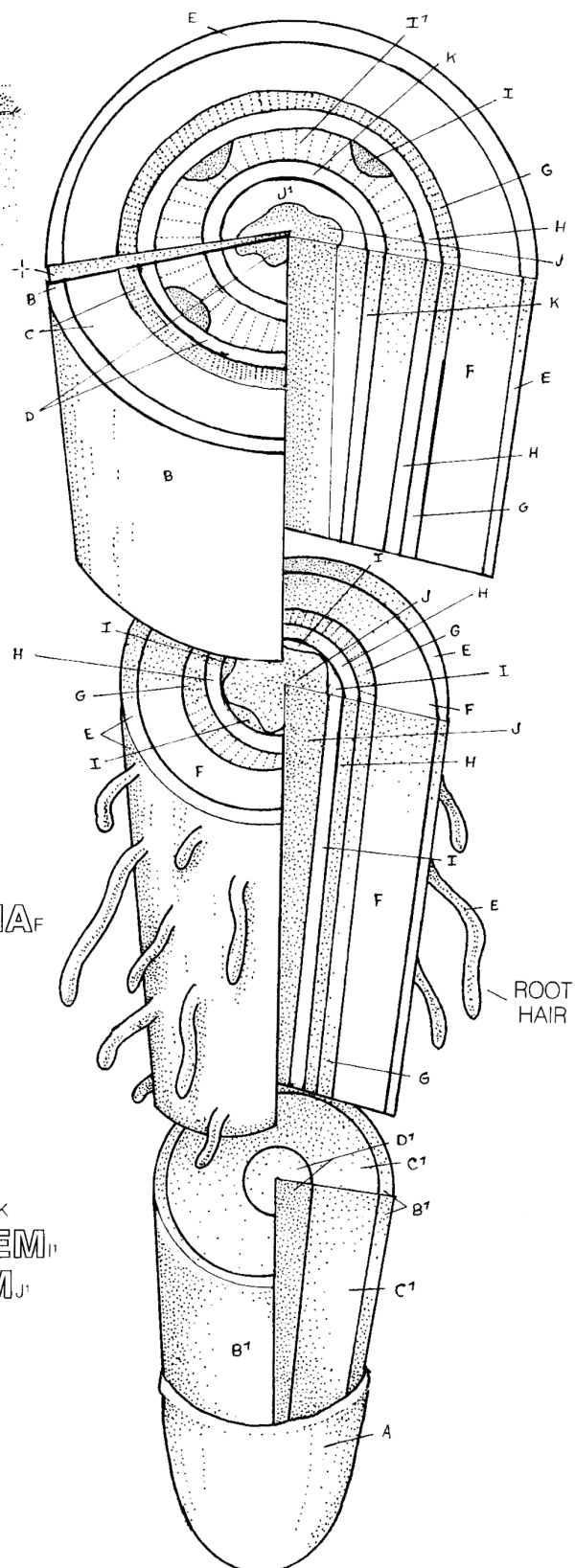


diagram from The Botany Coloring Book (1982) by Paul Young

Practice: 5 points

Root Anatomy

Name: _____

Period: _____

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 ☐ .

3. What does xylem transport in a plant? *Hint: reread p.374.*

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 ☐ .

4. What does phloem transport in a plant? *Hint: reread p.374.*