

Plant Tissues

I. Introduction

- Vascular body plan
- Root system vs. Shoot system

II. Plant Tissues

A. Overview of tissues

- Ground tissue
- Vascular tissue
- Dermal tissue
- Meristems
 - Apical meristem
 - Ground meristem
 - Procambium
 - Protoderm
 - Lateral meristem
 - Vascular cambium
 - Cork cambium

B. Ground tissue

- Parenchyma
- Collenchyma
- Sclerenchyma

C. Vascular tissue

- Xylem
 - Tracheids
 - Vessel members
- Phloem
 - Sieve tube members
 - Sieve cells

D. Dermal tissue

- Epidermis
 - Cuticle
 - Stomata
 - Trichomes
 - Root hairs

III. Shoot System

A. Stems

- Dicots – vascular bundles in a ring
- Monocots – vascular bundles distributed throughout

BIO 102 General Biology
Lecture Outline

B. Leaves

Structure

Node Petiole/sheath Blade

Forms

Simple Compound

Layers

Upper/lower epidermis
Palisade mesophyll
Spongy mesophyll

IV. Root System

A. Root structure

Primary root

Lateral roots

Root hairs

Types of roots

Tap root

Fibrous root

B. Vascularization

Dicots

Vascular cylinder

Cortex / parenchyma

Monocots

Vascular cylinders in ring

Pith & cortex

V. Secondary Growth

A. Wood

Secondary xylem

Heartwood vs. sapwood

B. Bark

Cork

Cork cambium

Secondary phloem

C. Growth rings

Spring vs. summer xylem

Hardwoods vs. softwoods