

GENERAL BIOLOGY Lecture 27 - Animal cells, Tissues, and Systems

- I. Plants in relation to animals**
 - A. Plants**
 - 1. Meristematic tissues - protoderm, ground meristem, and procambium
 - 2. Main types of tissues - dermal, ground, and vascular
 - B. Animals**
 - 1. Preliminary tissues - ectoderm, mesoderm, and endoderm
 - 2. What ectoderm, mesoderm, and endoderm become
 - a) Ectoderm - outer skin and tissues of nervous system
 - b) Mesoderm - muscle, organ tissues (circulation, reproduction, excretion), and connective tissue
 - c) Endoderm - lining of the gut and organs derived from it
- II. Main tissue types and organ systems**
 - A. Tissue types**
 - 1. Epithelial - protection, absorption, and secretion
 - a) Lining of stomach, outer skin, lining of vagina
 - 2. Connective - connection, support, elasticity, transport, storage
 - a) Tendons around muscles, cartilage, adipose
 - 3. Nerve - detection of stimuli and response
 - a) Basic unit of nervous tissue - nerve cells (neurons)
 - 4. Muscle - contraction
 - a) Blood vessels (smooth), biceps (skeletal), and heart (cardiac)
 - B. Organ systems**
 - 1. Integumentary (skin) - protection, regulation, excretion, reception
 - 2. Muscular (muscles) - movement, maintenance, heat production
 - 3. Skeletal (bones) - support, protection, muscle attachment, blood cell production
 - 4. Nervous (nerves) - detection of stimuli, coordination, responses
 - 5. Endocrine (hormones) - control of bodily functions
 - 6. Circulatory (blood) - transport of oxygen, water, and food
 - 7. Lymphatic (immunity) - defense against invaders
 - 8. Respiratory (lungs, etc.) - regulation of gas exchange
 - 9. Digestive (stomach, intestines) - ingestion of food and preparation for absorption
 - 10. Urinary (bladder) - excretion of wastes
 - 11. Reproductive (sex organs) - production of gametes and reproduction
- III. Homeostasis - maintenance of bodily functions**
 - A. Mechanism**
 - 1. Stimulus (heat) - receptor (skin) - integrator (brain) - effector (muscle) - response
 - a) Negative feedback - counteracts the situation (move away)
 - b) Positive feedback - intensifies the situation