

key

Intro to A&P

- 1) List the levels of structural organization from smallest to largest.

Chemicals → Organelle → Cell → Tissue → Organ → Organ System → Organism

- 2) The body uses regulatory mechanisms to bring itself back to equilibrium. Why is maintaining equilibrium (homeostasis) so important?

Maintaining homeostasis is important because any deviation from equilibrium prevents the body from properly functioning.

- 3) List the necessary life functions. (8) Which is the most important? Least?

Most Important → Maintaining Balance
Movement
Responsiveness
Digestion
Metabolism
Excretion

Growth ← 2nd Least Important
Reproduction ← Least Important
↑ "Repro is the first to go."

- 4) List the survival needs in order to maintain life. (5)

- 1) Nutrients
- 2) Oxygen
- 3) Water
- 4) Normal Body Temperature
- 5) Atmospheric Pressure

- 5) Explain the differences between passive and active transport. What are the two types of passive transport?

Passive
(simple & facilitated diffusion)
• Must follow the concentration gradient
• Passive process (diffusion)
• Small particles

Active
• Uses ATP
• Active process
• Can go against the concentration gradient
• Large Particles

- 6) What are the two types of feedback loops? Give an example of each.

Negative: Bloodsugar

↑
output of system INHIBITS system

Positive: Birth/Clotting

↑
output of system AMPLIFIES system

Tissue Organization

- 1) List the four types of tissues.

Epithelial, Connective, Nervous, Muscle

- 2) Name the two types of tissues that make up membranes.

Connective Tissue & Epithelial Tissue

- 3) What are the functions of epithelial tissue?

1) Filters

4) Protects, Covers, & Lines

2) Sensory Input

5) Secretions/Excretions

3) Absorbs Nutrients

- 4) What type of junctional complex is found in epithelial tissues?

Tight Junctions

- 5) What are the specialized features of epithelial tissue? (Take your understanding further:

Explain why these features are important.)

Cellularity
↓
Forms Sheets

Unique Contact Points
(Junctional Complexes)
↓

Tight Junctions prevent
passage of water or out-side
contaminants from getting between cells

Polarity
↓

Up/Down
important
for regeneration

Ability to Regenerate
↓

Allows for new cells to
replace old, damaged
cells

Supported by connective tissue
(innervated, but avascular)

→ CT supplies blood to epithelial tissues (epithelial tissue has
nerves, but no blood supply)

- 6) Draw a simple picture of each type of epithelial tissue.

- a. Simple



one layer

- b. Stratified



multiple layers

- c. Squamous



flat, squished

- d. Cuboidal



about as tall as it is wide

- e. Columnar



taller than it is wide

f. Pseudostratified Columnar

Apical



one layer, different cell sizes and nuclei placement

Basal

7) Circle one. Pseudostratified columnar epithelium attach to the (basal/apical) surface.

↑ they won't always go to the apical surface