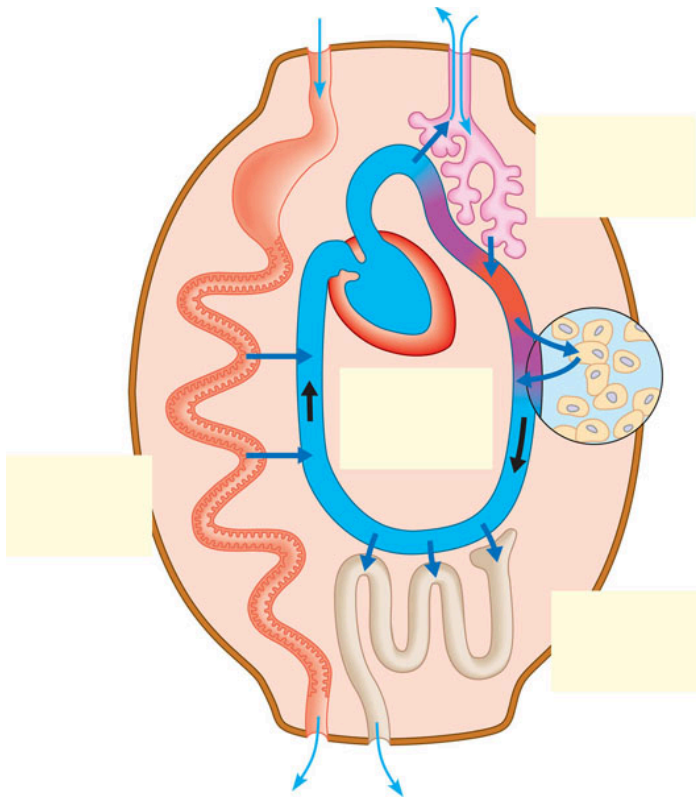


AP Biology
Guided Reading Chapter 40
Basic Principles of Animal Form and Function

Name _____

1. How do Anatomy and Physiology differ?
2. Explain how convergent evolution applies to animal form.
3. Compare and contrast diffusion in a single-celled protist to an animal with two cell layers.
4. Label the diagram of the internal exchange surfaces.



5. Define the following:

a. Tissues-

b. Epithelial Tissues-

Glandular epithelia-

Mucus membranes-

Simple epithelium-

Stratified epithelium-

Cuboidal cells-

Columnar cells-

Squamous cells-

c. Connective Tissues-

Collagenous fibers-

Elastic fibers-

Reticular fibers-

Fibroblasts-

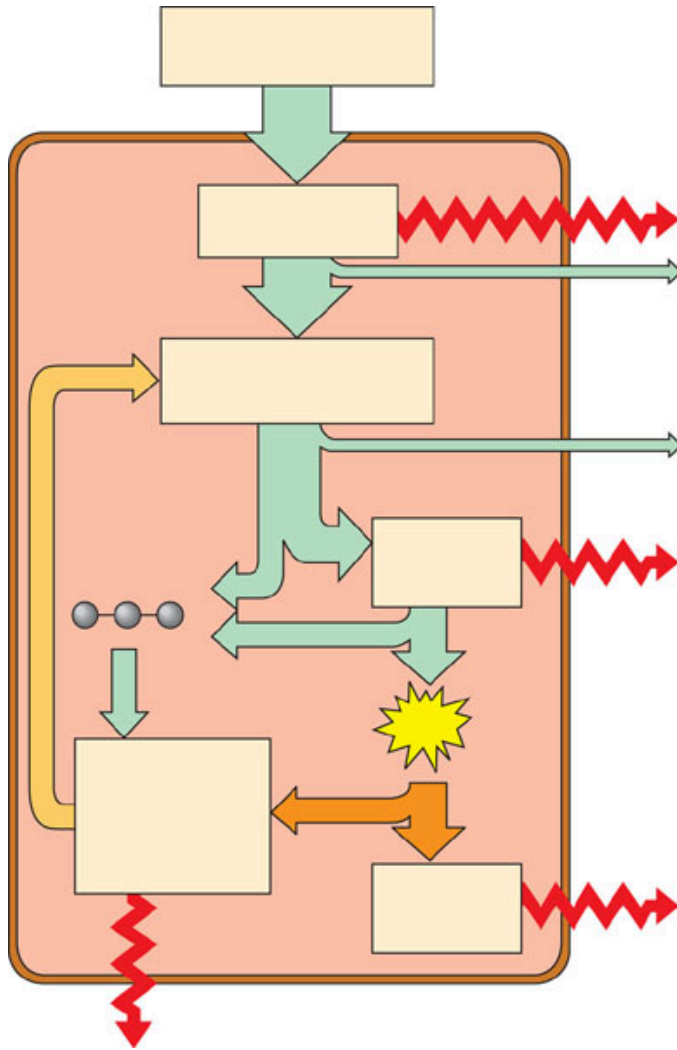
Macrophages-

d. Muscle Tissues-

e. Nervous Tissue-

6. How are the tissues arranged into organs and then into organ systems? Explain this using the digestive system as an example.

7. Label the diagram explaining bioenergetics in animals



8. What is metabolic rate and how is it determined?
9. Explain the three influences on metabolic rate.

10. Based on figure 40.10, what is an energy budget and how does it vary in four different animals?

11. Define and explain the following:

Regulators-

Conformers-

Negative feedback-

Positive feedback-

Thermoregulation-

12. Compare and contrast ectotherms and endotherms.

13. There are 5 categories of adaptations that help animals thermoregulate. Describe each one and how they work in your own words.

Insulation-

Circulatory Adaptations-

Cooling by Evaporative Heat Loss-

Behavioral responses-

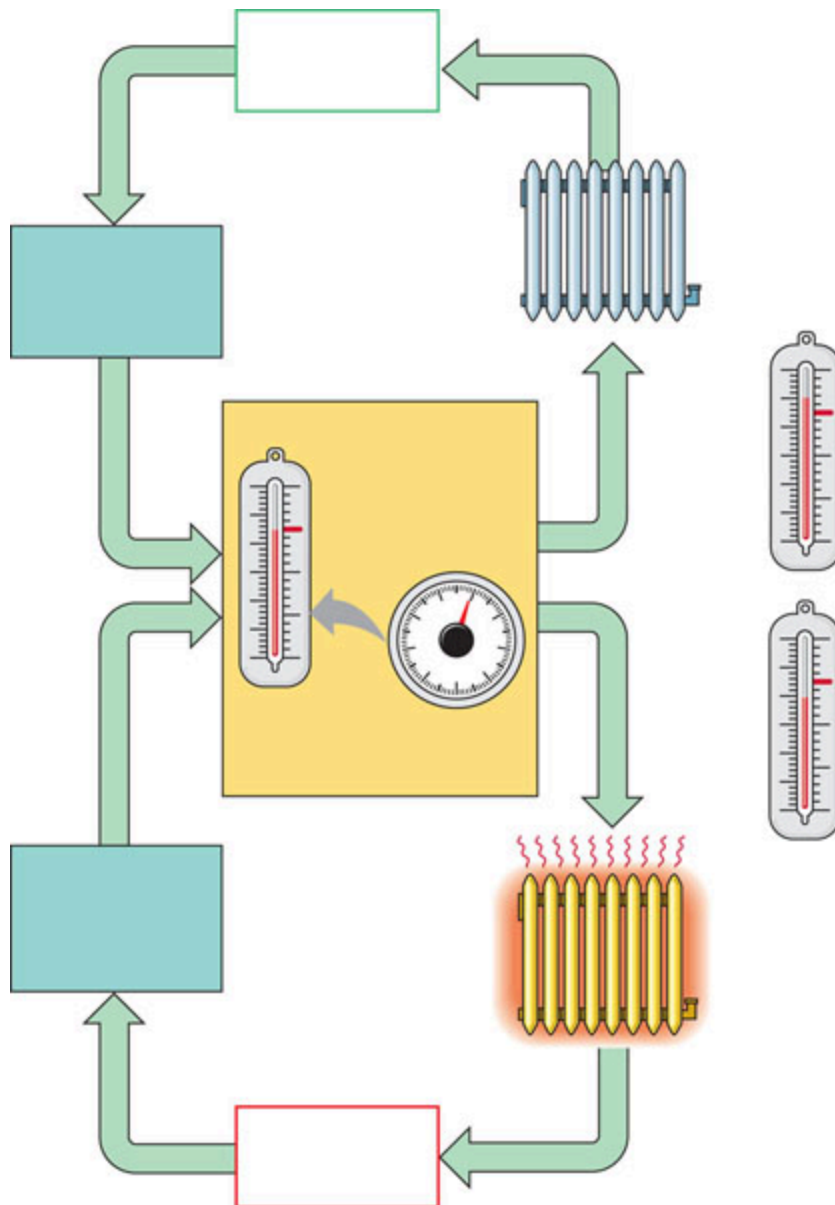
Adjusting Metabolic Heat Production-

14. Name three of the organ systems that help with thermoregulation by complex negative feedback mechanisms.

15. Define the following:

- a. Acclimatization-
- b. Stress-induced proteins-
- c. Heat-shock proteins-
- d. Torpor-
- e. Hibernation-
- f. Estivation-
- g. Daily torpor-

16. Complete the diagram below:



17. Torpor involves a _____ in what metabolic rates.

