

Ch 40 Questions - Due _____

1. What does the phrase “Form follows function” mean to biologists? Explain.
2. List the six types of connective tissue, a brief description and an example of each.
3. List the three types of muscle tissue and give a short description and example of each.
4. List the 11 organ systems found in mammals, a short description and an example of each.
5. Describe the difference between a negative and positive feedback system.
6. In a paragraph or two evaluate the validity of the phrase: “Comparatively, a mouse needs to eat more than an elephant.”
7. Compare and contrast ectothermy and endothermy. Give advantages and disadvantages of each.
8. Discuss the four major methods found in animals for adjusting their body temperatures.
9. Looking at the groups of animals below know which groups are ectothermic and which are endothermic and how they primarily regulate their body temperatures.
 - a. Invertebrates
 - b. Most fishes (Exceptions?)
 - c. Amphibians
 - d. Reptiles
 - e. Birds
 - f. Mammals

Chapter 41 - Digestive System – Due _____

1. Define and describe the sequence and relationship between absorption, digestion, ingestion and elimination.
2. What are the advantages of the complete digestive system over the simple gastrovascular cavity? What are the corresponding changes in the animals that have evolved from having a complete digestive system?
3. Make a chart that lists the major organs of the digestive system in order from ingestion through elimination, their primary digestive function (what is primarily digested/performed there) and each area’s major digestive enzymes and /or hormones that are created/released.
4. Describe the relationship between dentition and diet. (Include examples of each kind of dentition.)
5. Explain and describe the general relationship between length of alimentary canal and diet. Examples?
6. What is the difference between vitamins and minerals in an animal’s diet? Examples of each?
7. Why is it not good to overindulge in fat-soluble vitamins? Why is it much less toxic to over ingest water-soluble vitamins?

Chapter 42 - Circulatory and Vascular System - Due _____

1. Explain what the lymphatic system does and why it is important.
2. List the major components of blood, their role and how they are produced.
3. Explain how blood clots.
4. Explain what atherosclerosis is, what leads to it, and what causes it and its long-term ramifications.
5. Explain how the gas exchange process in our respiratory system works. Be sure to include the important structures and molecules involved.
6. What is counter current exchange, where is it seen and why is it vital for these organisms?
7. How does the trachea system work in insects?
8. Explain how the feedback system that keeps us breathing works.
9. What is myoglobin? Why is it important to us? How about its importance to / abundance in diving mammals?

10. What is a single loop circulation/ double loop circulation and what types of organisms have each?
11. Know the parts of a mammalian heart/circulatory system and what each does (Fig 42.5)

Chapter 43 – The Immune System

Due _____

1. Identify and summarize the three lines of defense that are found in the body's system of natural defenses.
2. Describe how the skin and mucous membranes protect humans.
3. Describe the inflammatory response from onset of injury through healing of tissue.
4. Explain what antibodies are and what they do.
5. Explain allergies, autoimmune disorders and immunodeficiency.

Chapter 44 – Osmoregulation and excretion

Due _____

1. Describe the differences between an osmoregulator and an osmoconformer.
2. Name and describe the nature of the tissues that is common to just about all excretory systems and the basic actions that must happen in these areas.
3. Describe the very different problems and solutions that affect saltwater and freshwater bony fishes.
4. Describe briefly the basic structures of these various types of "early" excretory organs and know which animals have them:
 - a. Protonephridia(flame cells)
 - b. Metanephridia
 - c. Malphigian tubules
5. Using the attached diagram identify and give the function of each structure in the mammalian excretory system. (Fig 1 and 2)
6. Using the attached diagram identify and give function of each part of the nephron. (Fig 3)
7. Explain the correlation between the type of nitrogenous waste produced (ammonia, urea, uric acid)
8. by an organism and its lifestyle.

Ch 45 - The endocrine system - Due _____

1. Describe the types of chemical signals produced in living things and how they work.
2. What ARE hormones? Describe the basics of what they do and how they do it.
3. Know location, major hormone(s) secreted, actions of and regulator of the following endocrine glands: (Table 45.1)
 - a. Hypothalamus
 - b. Pituitary
 - c. Thyroid
 - d. Pancreas
 - e. Adrenal medulla
 - f. Testes and ovaries (gonads)
4. What is the hypothalamus? What does it do?
5. What is the pituitary gland and why is it so important?
6. What hormones are released from the pituitary and what do they affect?
7. Explain how the body regulates blood sugar levels.

8. What/where are the adrenal glands? Function of adrenal glands?

Ch 44 Diagrams

Fig 1

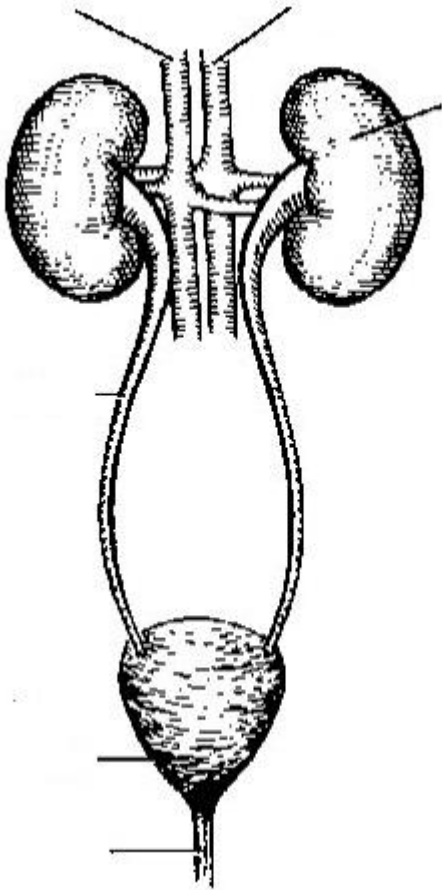


Fig 2

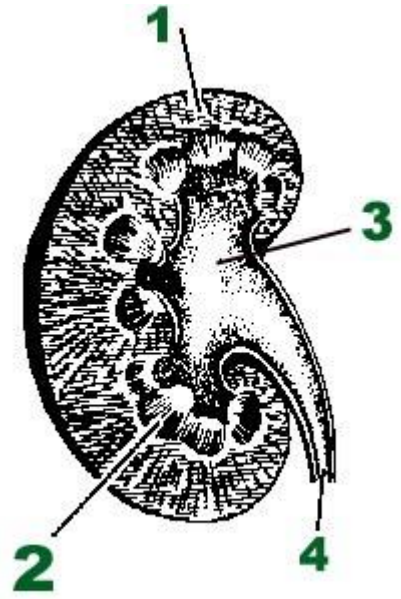
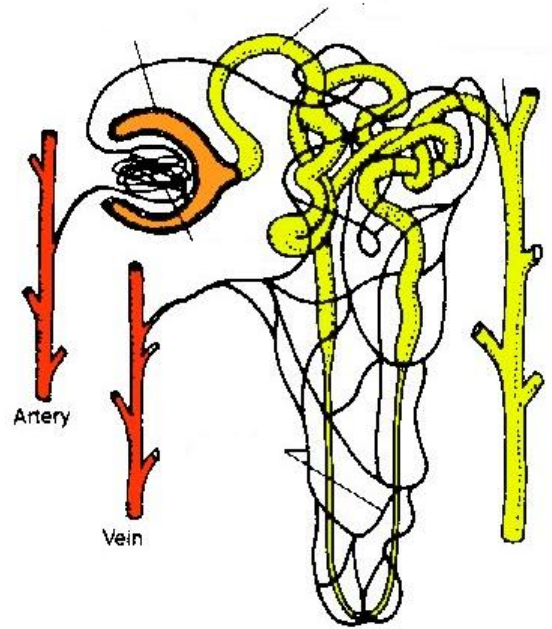


Fig 3



Chapter 46 Questions - Animal reproduction and development

Due _____

1. List functions of each part below: be able to label a diagram with the appropriate name of each

Male

Testes
Epididymis
Vas deferens
Seminal vesicles
Prostate gland
Bulbourethral gland
Penis

Female

ovary
oviduct (fallopian tube)
uterus
cervix
vagina

2. List the path that a sperm would have to travel from where it is produced until it fertilizes an egg. Where does the fertilization event take place in humans?
3. Describe spermatogenesis. (Onset is when in humans?)
4. When does oogenesis begin in human females? When does it end?
5. Human egg development is arrested at what stage? Until when?
6. When does egg meiosis begin again and what happens then?
7. Summarize hormonal control of the ovarian cycle and menstrual cycle. (What hormones involved, where produced, what is effect of each, how long produced etc...)
8. When (what days), during the ovarian/menstrual cycle, can a human female who is ovulating normally conceive a child? Explain why.
9. Describe the general stages of mammalian development from conception through parturition.
10. How long is a human's pregnancy? What is the general trend when comparing pregnancy length to placental mammal body size?

Chapter 47 Questions – Animal Development

Due _____

1. Describe fertilization and what happens as the sperm enters an egg.
2. Contrast a sea urchin's fast block and slow block to polyspermy with that of a human.
3. What are the three embryonic germ layers and what do they give rise to?
4. Write a paragraph or two that uses / explains the relationship between the following terms:
 - a. gastrulation
 - b. Invagination
 - c. Blastopore
 - d. Blastocoel
 - e. Archenteron

AP Bio - Chapter 50-55 Questions

These are the major points discussed in Chapters 50-55. You should familiarize themselves with these areas. These chapters cover @10% of the exam. We will be reviewing these questions during the week of May 6th – 9th as we have time. They are NOT an assignment that will be graded or you will receive points for.

Ch 50-55

1. Define ecology and explain why it is of utmost importance that we understand it today.
2. Know 5 abiotic factors that are important and summarize why they are important.
3. Explain why many deserts occur on the leeward sides of mountain ranges.
4. Explain why we have seasons on the planet earth.
5. Be able to identify the major types of terrestrial biomes, know their general conditions and where they are found.
6. Be able to identify and describe the major parts of and types of aquatic biomes.
7. Explain the relationship that exists between body size and generation time.
8. Explain the population cycles as seen in the lynx/snowshoe hare graph (fig 52.19)
9. Make sure and be familiar with community ecology, predation, parasitism, coevolution, competitive exclusion, commensalism, and mutualism.
10. What is a keystone predator and give an example.
11. Read about succession and be able to explain the intermediate disturbance hypothesis.
12. Explain what trophic levels are.
13. Describe the difference in the type of food consumed between primary and secondary level consumers.
14. Explain what a biomass pyramid is and what they try to represent.
15. Explain why there are always more primary consumers than secondary/tertiary consumers?
16. Describe the basic features of the carbon cycle, the water cycle, and the nitrogen cycle
17. Why do harmful substances such as DDT get magnified as you go farther up the trophic levels?