

# **BIOLOGY**

**In order to provide OHS Biology students with the best educational opportunities possible during this mandatory school closure, I have provided the following assignments for students to complete over the next few weeks.**

## **Student Instructions:**

- 1) If you have a printer, print out the assignments and handouts
- 2) If you don't have a printer, you can write the answers for each assignment on a piece of binder paper **or** you can email me at [csickels@orlandusd.net](mailto:csickels@orlandusd.net) requesting a packet. I will have the OHS office send a printed copy of the materials to your address. You must email me your request by **Monday, May 18<sup>th</sup> at noon**.
- 3) Once you complete each asterisked (\*) assignment, take a picture of the completed assignment (all sides) and email it to [csickels@orlandusd.net](mailto:csickels@orlandusd.net) to receive credit toward your class grade. All assignment with an asterisk (\*) are due by **May 29<sup>th</sup> at 3pm**. Make sure that all images are clear and readable & show your name and class period.

## **HUMAN ANATOMY UNIT – PART II:**

- Day 1: Read chapter 49 in your Modern Biology textbook and complete the **Ch. 49 note section** in the Ch. 49-52 Note Packet
- Day 2: Use your textbook/computer to label and color the structures in the **Digestive System Diagram** and watch "How Your Digestive System Works" at <https://www.youtube.com/watch?v=Og5xAdC8EUI>. The link is on the OHS Science website on the Biology page under Helpful Stuff.
- Day 3: Use your textbook/computer to label and color the structures to label & color the parts of the **Urinary System Diagram** and answer the **Section Review Questions 1-5\*** on pages 982, 989, and 996 in your textbook.
- Day 4: Use your textbook to answer the **Ch. 49 Review Questions 1-15\*** on page 998
- Day 5: Read chapter 50 in your Modern Biology textbook and complete the **Ch. 50 note section** in the Ch. 49-52 Note Packet
- Day 6: Watch "The Nervous System in 9 Minutes" video at <https://www.youtube.com/watch?v=44B0ms3XPKU>. The link is on the OHS Science website on the Biology page under Helpful Stuff and answer the **Section Review Questions 1-5\*** on pages 1008, 1011, 1016, and 1022 in your textbook.
- Day 7: Use your textbook to answer the **Ch. 50 Review Questions 1-15\*** on page 1024
- Day 8: Read chapter 52 in your Modern Biology textbook and complete the **Ch. 52 note section** in the Ch. 49-52 Note Packet
- Day 9: Use your textbook/computer to label & color the structures in the **Reproductive Systems Diagrams**
- Day 10: Complete the **Human Anatomy Worksheet #2\***.
- Day 11: Answer the **Section Review Questions 1-5\*** on pages 1049, 1053, and 1058 in your textbook.
- Day 12: Use your textbook to answer the **Ch. 52 Review Questions 1-15\*** on page 1060
- Day 13: Complete the **Human Anatomy Word Search\***
- Day 14: Complete the **Human Anatomy Worksheet #3\***
- Day 15: Complete the **Biology Course Review Worksheet #2\***

### III. CHAPTER 49

#### A. Nutrients =

1. Carbohydrates -
2. Proteins -
3. Lipids -
4. Vitamins -
5. Minerals -

#### B. Digestive System

1. Function:
  - a)
2. Structures:
  - a) mouth =
    - i. teeth -
    - ii. saliva -
    - iii. tongue -
    - iv. bolus -
  - b) esophagus =
    - i. epiglottis -
    - ii. peristalsis -
  - c) stomach =
    - i. gastric fluid -
    - ii. chyme -
  - d) small intestine =
  - e) large intestine =
  - f) liver =
  - g) gall bladder =
  - h) pancreas =

### C. Urinary System

#### 1. Functions:

a)

b)

#### 2. Structures

a) kidneys =

i. renal cortex -

ii. renal medulla -

iii. renal pelvis -

iv. nephron -

b) ureter =

c) urinary bladder =

d) urethra =

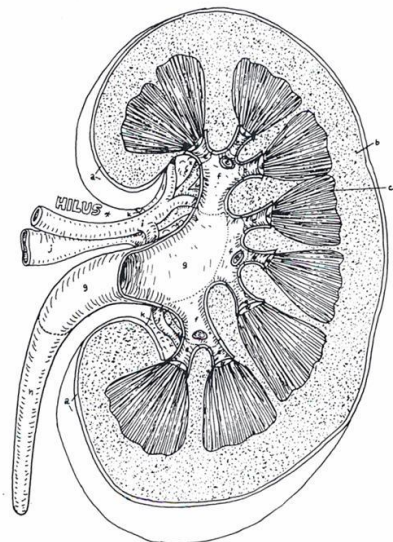
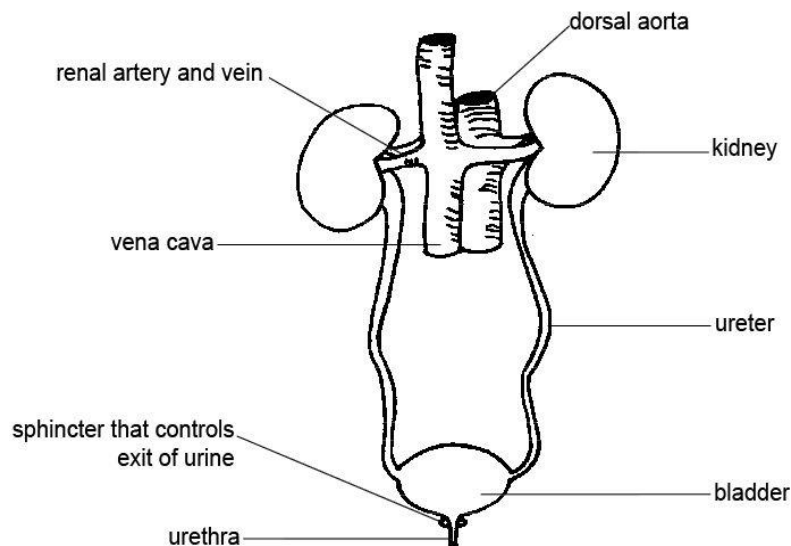
#### 3. Excretory Processes:

a) filtration -

b) reabsorption -

c) secretion -

d) excretion -



## IV. CHAPTER 50

### A. Nervous System

#### 1. Functions:

- a)
- b)

#### 2. Divisions:

##### a) Central Nervous System (CNS) =

##### v. brain -

- cerebrum -
- cerebellum -
- brain stem (upper & lower) -

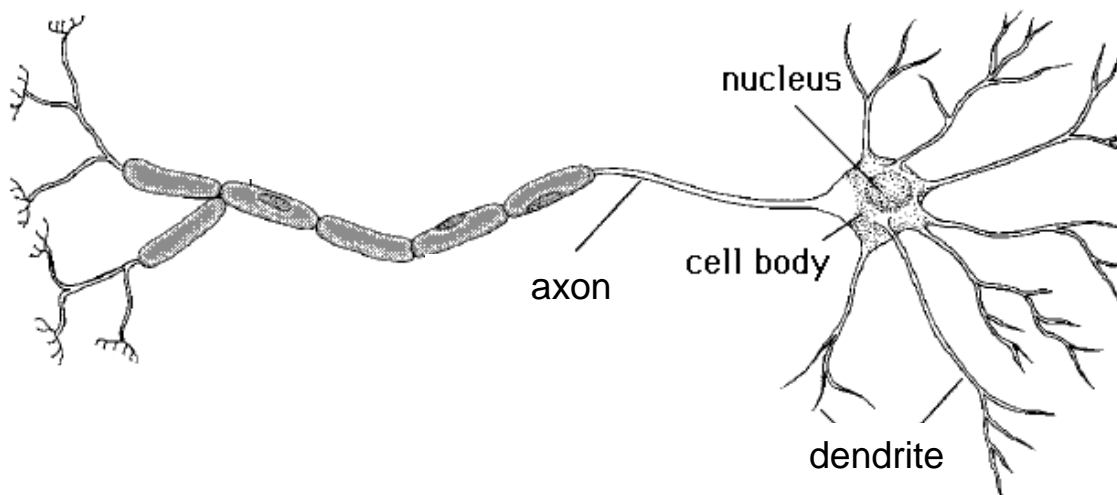
##### ii. spinal cord -

##### iii. meninges -

##### b) Peripheral Nervous System (PNS) =

##### i. neuron -

- dendrites -
- cell body -
- axons -
- neurotransmitters -



## V. CHAPTER 52

### A. Reproductive System

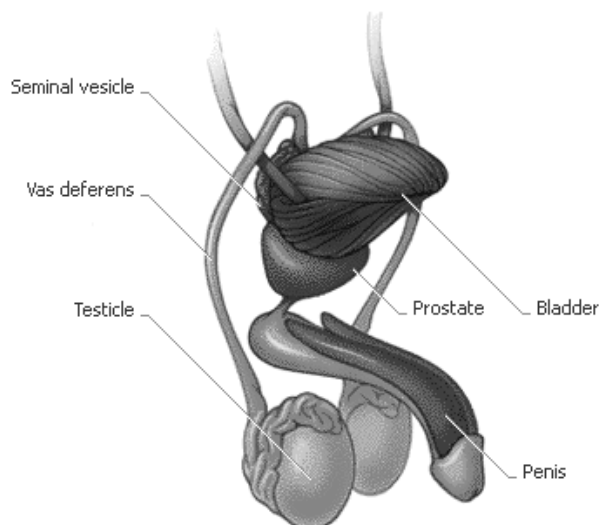
#### 1. Male System

- a) sperm -
- b) testes -
- c) scrotum -
- d) urethra -
- e) penis -

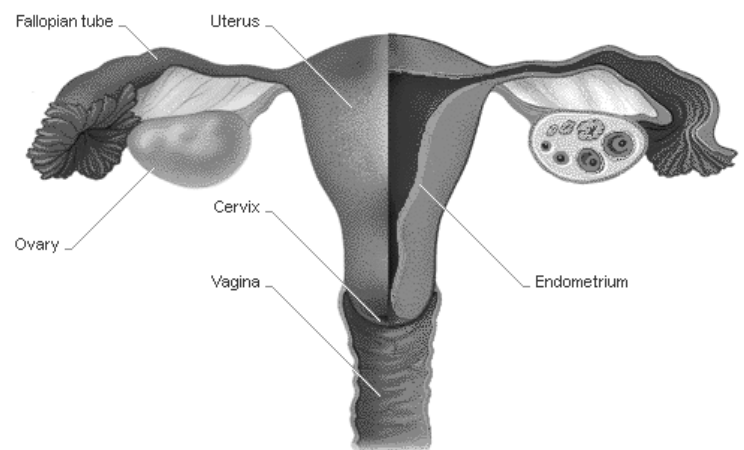
#### 2. Female System

- a) ovum -
- b) ovary -
- c) fallopian tubes -
- d) uterus -
- e) vagina -
- f) cervix -

### MALE SYSTEM

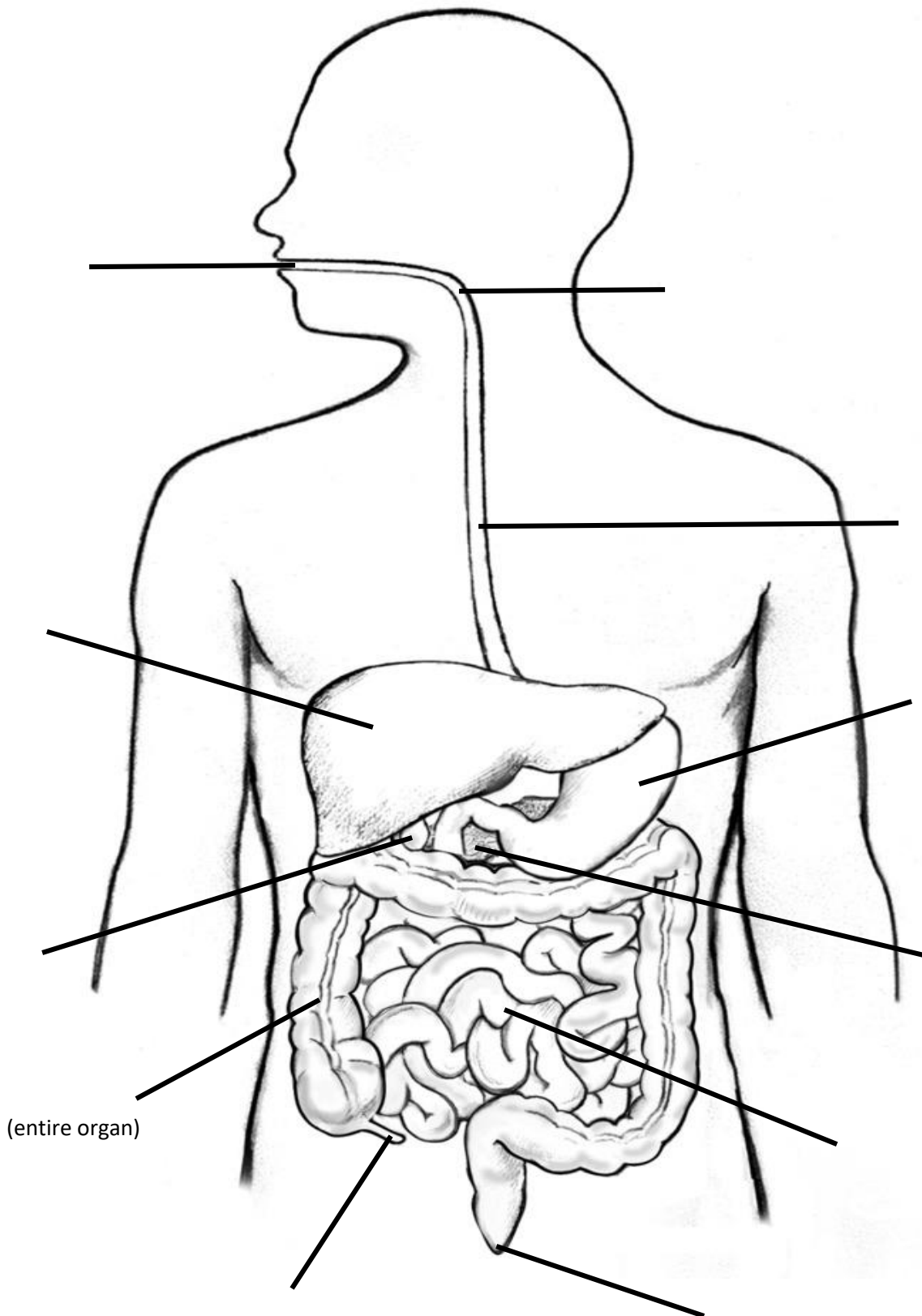


### FEMALE SYSTEM



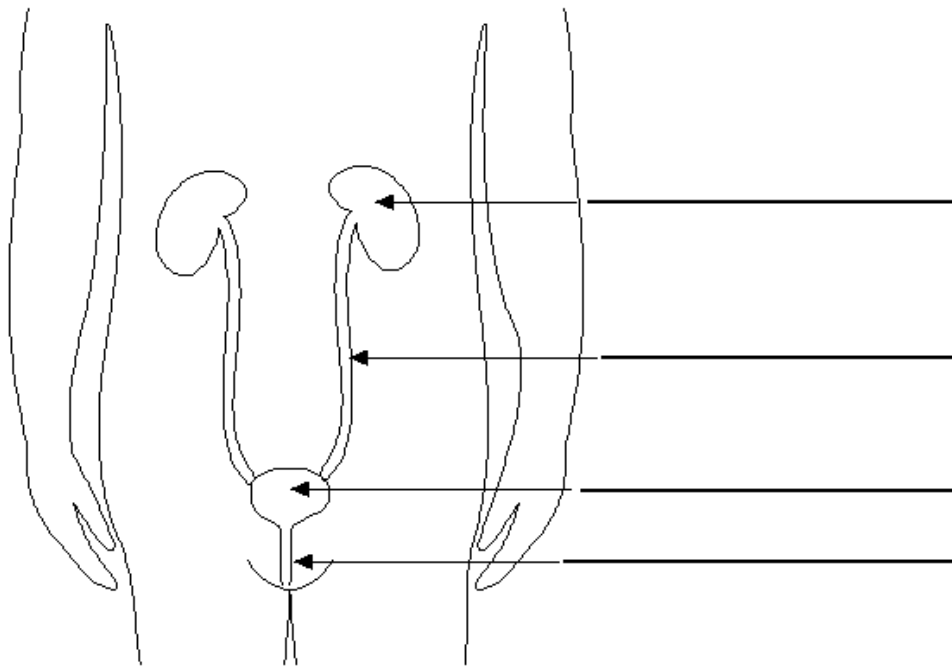
## DIGESTIVE SYSTEM DIAGRAM

**DIRECTIONS:** Use your textbook to label and color the structures of the digestive system below.

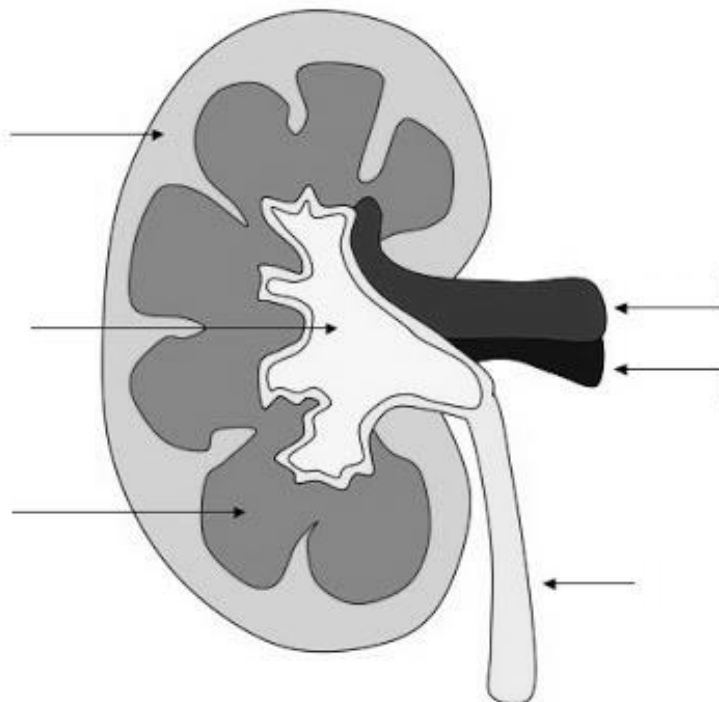


## URINARY SYSTEM DIAGRAM

**DIRECTIONS:** Use your textbook to label and color the structures of the urinary system below.

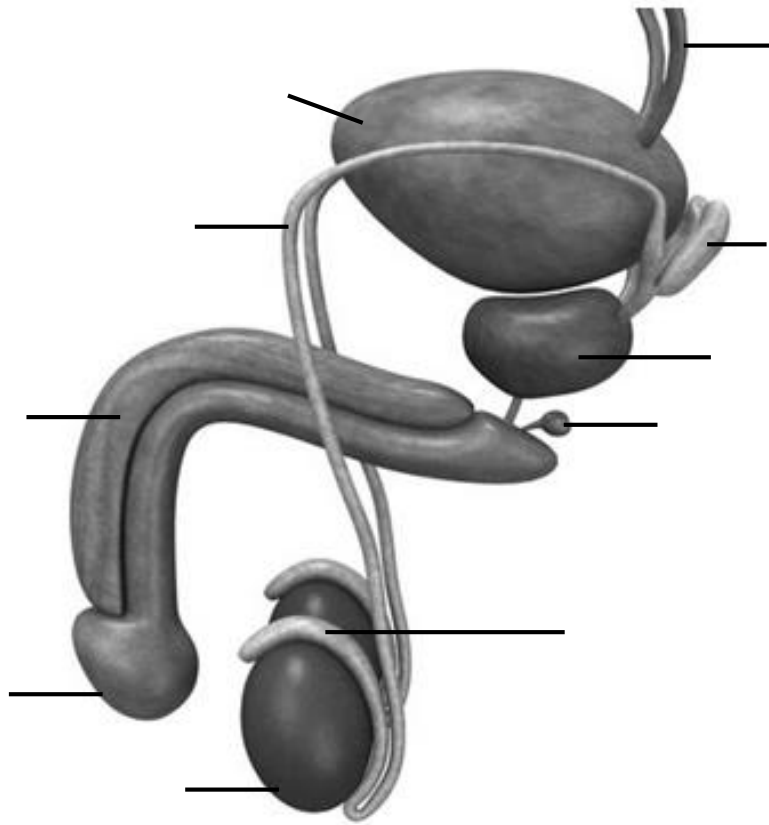


**DIRECTIONS:** Use your textbook to label and color the parts/regions of the kidney below.

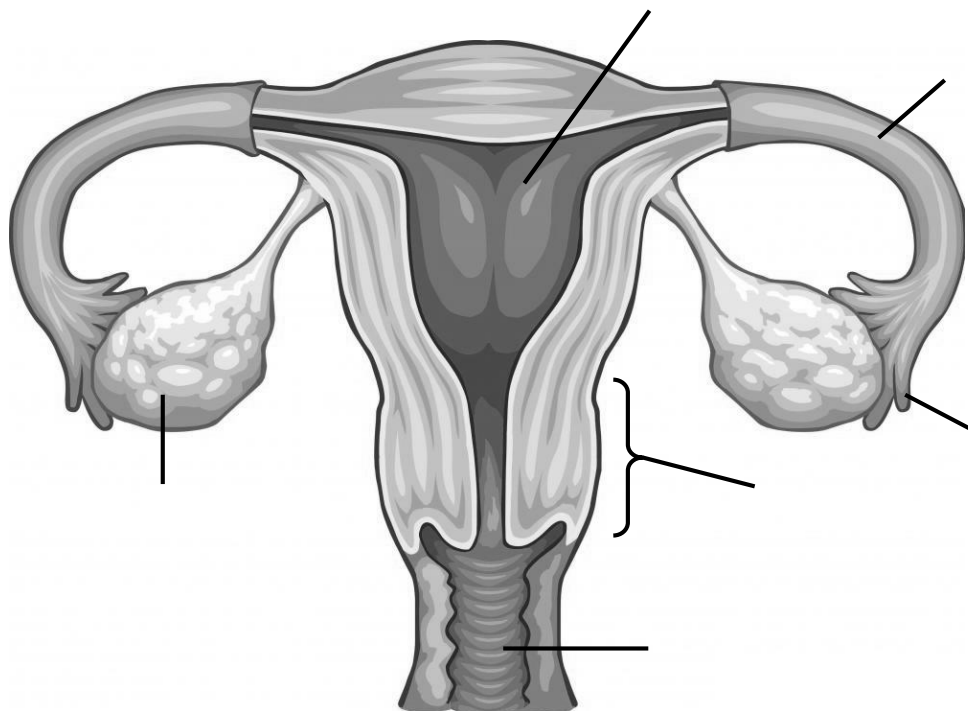


## REPRODUCTIVE SYSTEM DIAGRAMS

### MALE REPRODUCTIVE SYSTEM:



### FEMALE REPRODUCTIVE SYSTEM:





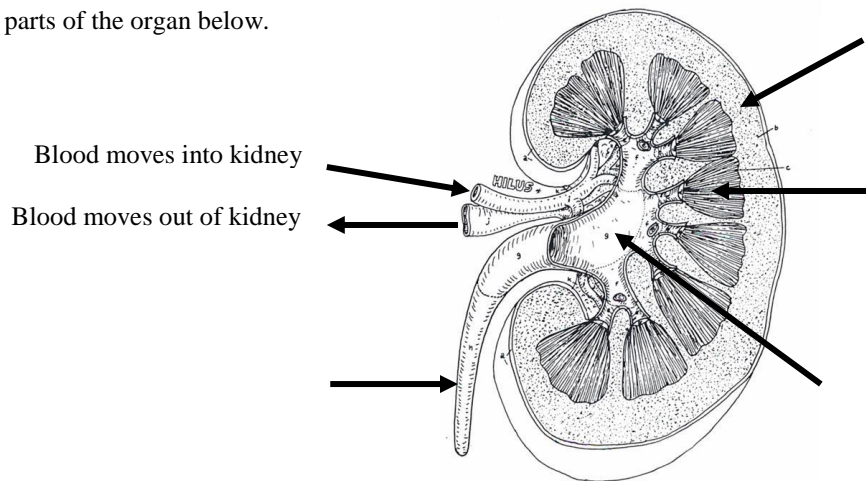
## HUMAN ANATOMY WORKSHEET #2

1. The meninges are made of three protective layers that surround the brain and spinal cord. Use your book to name them.

- a) \_\_\_\_\_ b) \_\_\_\_\_ c) \_\_\_\_\_

2. The removal of metabolic wastes from the blood occurs in the bean-shaped organs called \_\_\_\_\_.

3. Label the parts of the organ below.



4. Which organ system is shown in the diagram above? \_\_\_\_\_

5. What is the functional unit of the kidney called? \_\_\_\_\_

6. The \_\_\_\_\_ is a narrow tube that carries urine from each kidney to a muscular sac that stores urine called the \_\_\_\_\_ and out of the body through a tube called the \_\_\_\_\_.

7. Write the name of the organ system that matches each of the following functions.

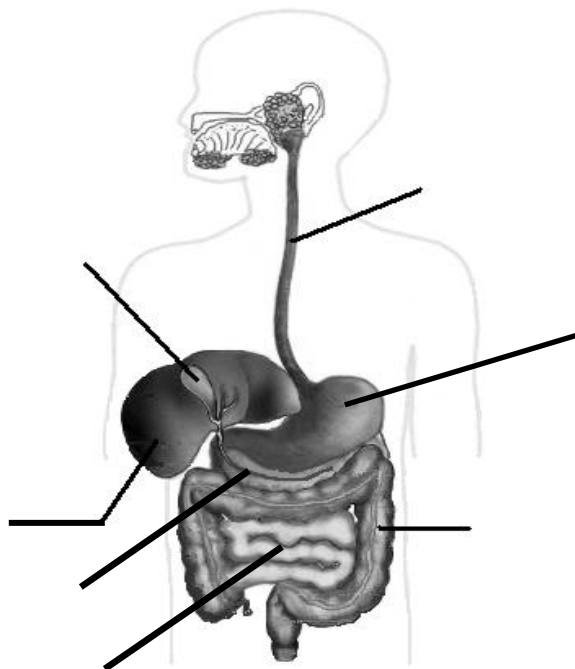
- A. Receives and transmits messages around the body \_\_\_\_\_  
B. Regulates water balance \_\_\_\_\_  
C. Breaks down nutrients into smaller molecules for use by cells \_\_\_\_\_

8. How does chemical digestion differ from mechanical digestion?

9. What are the three parts of the brain?

- a) \_\_\_\_\_ b) \_\_\_\_\_ c) \_\_\_\_\_

10. What substance does the pancreas produce? \_\_\_\_\_
11. In the female, where are the haploid gametes stored? \_\_\_\_\_
12. \_\_\_\_\_ are the structures located next to each ovary and carry eggs to the uterus.
13. What is the function of the gall bladder? \_\_\_\_\_
14. \_\_\_\_\_ are chemical substances that organisms need in order to grow and function properly.
15. What is the name of the pouch that keeps the sperm cooler than the temperature of the body? \_\_\_\_\_
16. What fluid in the mouth is responsible for chemical digestion? \_\_\_\_\_
17. Food that is thoroughly chewed, moistened, and rolled into ball is called a \_\_\_\_\_.
18. \_\_\_\_\_ is the series of rhythmic muscular contractions and relaxations that move food through the digestive tract.
19. What are the three digestive organs that are not part of the tube that run from the mouth to the anus?
- a) \_\_\_\_\_ b) \_\_\_\_\_ c) \_\_\_\_\_
20. The millions of fingerlike projections that line the small intestine are called \_\_\_\_\_ and the even smaller extensions that help to increase the absorption of nutrients are called \_\_\_\_\_.
21. What are the three parts of a neuron?
- a) \_\_\_\_\_ b) \_\_\_\_\_ c) \_\_\_\_\_
22. What are the two parts of the central nervous system?
- a) \_\_\_\_\_ b) \_\_\_\_\_
23. Label the parts of the digestive system.



## **HUMAN ANATOMY WORD SEARCH**

**DIRECTIONS:** Answer the questions below and then find your answers in the word search on the back.

1. The \_\_\_\_\_ are the tough membrane surrounding the brain.
2. The \_\_\_\_\_ is the funnel-shaped portion of the kidney that collects waste materials.
3. The \_\_\_\_\_ controls heart rate, breathing, reflexes, & hormone production.
4. The tunnel that carries the ovum to the uterus is called the \_\_\_\_\_.
5. The \_\_\_\_\_ is the functional unit of the kidney.
6. The outermost portion of the kidney is called the renal \_\_\_\_\_.
7. The \_\_\_\_\_ is the fleshy sac that holds the testes in males.
8. The process of removing toxins from the blood is called \_\_\_\_\_.
9. The \_\_\_\_\_ carries nerve impulses away from the cell body.
10. \_\_\_\_\_ is a series of muscular contractions that force food to the stomach.
11. The first portion of the small intestine is called the \_\_\_\_\_.
12. The process of \_\_\_\_\_ removes metabolic wastes from the body.
13. The mixture of food & gastric juices is called \_\_\_\_\_ which leaves the stomach and is emptied into the \_\_\_\_\_.
14. The two type of digestion are \_\_\_\_\_ and \_\_\_\_\_.
15. The \_\_\_\_\_ is an organ that produces a substance that dissolves fats.
16. \_\_\_\_\_ glands produce saliva to begin chemical digestion in the mouth.
17. The organ that produces the male haploid gamete is called the \_\_\_\_\_.
18. The \_\_\_\_\_ is the tube that carries urine to the outside world.
19. The \_\_\_\_\_ controls balance for the body.
20. The lower third of the uterus is called the \_\_\_\_\_.

# HUMAN ANATOMY WORD SEARCH

E U R E T H R A X E N T C J D C Y E  
C N S Q V A K X S D O V H S U T J B  
E S I O X C Y P S G I E Y N O G R U  
R E C T I V A C L A T I M O D E N T  
V Z O J S N R L T M E J E X E S U N  
I S R C Y E I I E N R U R A N F J A  
X A T S E V T C M T C A A E U D S I  
I B E X E T H N O E E O Z V M T C P  
P B X R X A V M I N S G A H C H C O  
O E R E N A L P E L V I S E E M G L  
Z Q R I N V C M C B L U R M O E O L  
U Z C I L W U H J W A A I R S T N A  
U A Z R S G D N Q K I C M V T S O F  
L X G M U T O R C S A Z V S E N R E  
E F B T Z X A T L L W T I K O I H X  
W I N R M U L L E B E R E C C A P Q  
G I M L X E Z O S C B Z R S Y R E J  
E X C R E T I O N I L N E T T B N Y  
I E W Y R A V I L A S S Y J E E W D  
J H Q N S E G N I N E M V I S R S N

### **HUMAN ANATOMY WORKSHEET #3**

**DIRECTIONS:** In the space provided, write the correct letter of the term that best matches each of the following descriptions.

- |  |                     |
|--|---------------------|
| 1. _____ The process of removing metabolic wastes from the body.                                   | A. Neuron           |
| 2. _____ Organ formed by the duodenum, jejunum, and ileum.   | B. Chyme            |
| 3. _____ The functional unit of the kidney that filters the blood.                                 | C. Excretion        |
| 4. _____ Essential organic molecules that assist in body functions.                                | D. Sperm            |
| 5. _____ Located between the uterus and the vagina.  | E. Gall bladder     |
| 6. _____ Pair of hollow structures that carry an ovum to the uterus.                               | F. Cervix           |
| 7. _____ Organ below the liver that stores bile.   | G. Peristalsis      |
| 8. _____ Chemical messenger sent across a synapse to pass a nerve impulse.                         | H. Meninges         |
| 9. _____ Fingerlike projections that increase surface area of the intestinal wall.                 | I. Ureter           |
| 10. _____ Produces insulin to help break down carbohydrates.                                       | J. Fallopian tubes  |
| 11. _____ Prevents food from entering the trachea.   | K. Cerebellum       |
| 12. _____ The male gamete.   | L. Testes           |
| 13. _____ Produces haploid sperm cells.  | M. Epiglottis       |
| 14. _____ Mixture of food particles and gastric juices that leaves the stomach.                    | N. Vitamins         |
| 15. _____ Tough membrane that surrounds & protects the central nervous system.                     | O. Villi            |
| 16. _____ Is responsible for fine muscle coordination.   | P. Neurotransmitter |
| 17. _____ Transports wastes from the kidneys to the urinary bladder.                               | Q. Small intestine  |
| 18. _____ Series of muscular contractions that move a bolus toward the stomach.                    | R. Cerebrum         |
| 19. _____ Controls memory, the senses, learning, and thinking.                                     | S. Nephron          |
| 20. _____ Dendrites, axons, and the cell body all form this functional unit of the nervous system. | T. Pancreas         |

## **BIOLOGY COURSE REVIEW WORKSHEET #2**

1. What type of chromosomes are responsible for determining the gender of an individual?

**AUTOSOME**

**GENDER CHROMOSOME**

**TYPOSOME**

**SEX CHROMOSOME**

2. Plants convert carbon dioxide into oxygen through what process? \_\_\_\_\_

3. What are the sex chromosomes of a female? \_\_\_\_\_ What are the sex chromosomes of a male? \_\_\_\_\_

4. In people, hairy arms (H) are dominant over fine arm hair (h). A male with fine arm hair is crossed with a heterozygous female. Complete the Punnett square and answer the questions below.

a) What is the genotype of the female? \_\_\_\_\_

b) What is the phenotype of the male? \_\_\_\_\_

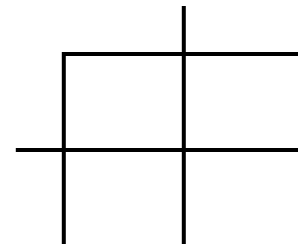
c) What are the genotype probabilities of the offspring?

\_\_\_\_\_

d) What are the phenotype probabilities of the offspring?

\_\_\_\_\_

e) Can these two parents have any children with fine arm hair? \_\_\_\_\_



5. Because it is constantly contracting, a cell from heart muscle would *probably* have an unusually high proportion of:

**lysosomes**

**mitochondria**

**mRNA**

**Golgi bodies**

**chloroplasts**

6. Which of the following is the smallest level of organization? **organ** **tissue** **cell** **organism**

7. A normal human being has how many autosomes? \_\_\_\_\_

8. What are the three parts of an RNA nucleotide? (be specific)

a) \_\_\_\_\_

b) \_\_\_\_\_

c) \_\_\_\_\_

9. Which of the following doesn't belong with the others? **homozygous** **Bb** **hybrid** **heterozygous**

10. A segment of DNA that codes for a particular trait, like hair color, is called a \_\_\_\_\_.

11. Asbestos, radiation, and ultraviolet light are all examples of \_\_\_\_\_ because they each can cause a change in the DNA.

12. \_\_\_\_\_ is the process of making proteins from messenger RNA.

13. Which organelle is responsible for transporting materials inside the cell? \_\_\_\_\_

14. The jelly-like material inside the mitochondria is called \_\_\_\_\_ and the folds of the inner membrane are called \_\_\_\_\_.

15. Which of the following is the type of anaerobic cellular respiration performed by plants.

**LACTIC ACID FERMENTATION**

**ALCOHOL FERMENTATION**

**PLANT FERMENTATION**

16. A \_\_\_\_\_ is a chemical compound that absorbs specific wavelengths of light.

**DIRECTIONS: Match the correct stage of mitosis with the following descriptions.**

**A. Anaphase**

**B. Metaphase**

**C. Interphase**

**D. Telophase**

**E. Prophase**

- \_\_\_\_\_ 17. The spindle fibers shorten. \_\_\_\_\_ 20. Cell plate forms between adjacent plant cells.
- \_\_\_\_\_ 18. The chromatin thickens to form chromosomes. \_\_\_\_\_ 21. The DNA replicates.
- \_\_\_\_\_ 19. The nuclear membrane reforms. \_\_\_\_\_ 22. Chromosomes line up in the middle of the cell.
23. \_\_\_\_\_ is the process by which solids are surrounded by the cell membrane and brought into the cell.
24. During meiosis, a tetrad is composed of how many chromatids? \_\_\_\_\_
25. \_\_\_\_\_ is the process of splitting of water during the light reaction of photosynthesis.
26. The mutation that results in missing or extra chromosomes is called \_\_\_\_\_.
27. A hypotonic cell has a \_\_\_\_\_ concentration of solute and a \_\_\_\_\_ concentration of solvent.
28. Which organelle is responsible for producing ribosomes? \_\_\_\_\_
29. \_\_\_\_\_ is the process of making mRNA from DNA.
30. Which of the following is an enzyme? **glycine** **amylase** **glycogen** **maltose**
31. Two or more different atoms that are joined by chemical bonds are called a \_\_\_\_\_.
32. The building blocks of proteins are \_\_\_\_\_ and \_\_\_\_\_ are the building blocks of carbohydrates.
33. One human disease is caused by a change in one codon in a gene from GAA to GUA. This disease is the result of:  
**a mutation** **an error during meiosis** **crossing-over** **polyploidy**
34. \_\_\_\_\_ was the first person to state that cells only come from other cells.
35. The addition or deletion of a nucleotide will result in a \_\_\_\_\_ mutation.
36. \_\_\_\_\_ is the process by which liquids are surrounded by the cell membrane and brought into the cell.
37. What pigment absorbs solar energy for the process of photosynthesis to occur? \_\_\_\_\_
38. Carbon fixation occurs during the \_\_\_\_\_ reaction of photosynthesis.
39. \_\_\_\_\_ are strands that help to move genetic material around the cell during meiosis.
40. A sequence of nitrogen bases from DNA is **ACAGTGC**. Circle the correct nitrogen base sequence in mRNA?  
**TGTCACG** **UGUCACG** **GUGACAU** **CACUGUA**
41. In fruit flies, the gene for red eyes (R) is dominant and the gene for sepia eyes (r) is recessive. What are the possible combinations of genes in the offspring of two red-eyed heterozygous flies (Rr)?  
**RR only** **rr only** **Rr and rr only** **RR, Rr, and rr only**
42. How many elements are in a compound with the formula **Ca<sub>4</sub>H<sub>5</sub>(SO<sub>2</sub>)<sub>2</sub>**? \_\_\_\_\_
43. The \_\_\_\_\_ is the sticky area that binds the two chromatids together.
44. Osmosis is a type of: (circle one) **ACTIVE TRANSPORT** / **PASSIVE TRANSPORT**