Introduction to Human Anatomy and Physiology Lecture Outline

I. Anatomy and Physiology

A. ANATOMY: _____ (morphology), form and how the parts are organized

B. PHYSIOLOGY: _____, what the parts do and how they work

C. _____ and _____ are closely associated and hard to separate in the human body. How a part is put together (Anatomy) effects how that part will work (Physiology).

II. Characteristics of Life – Necessary Life Functions

A. Common traits shared among humans and other living organisms

1. _____: change in position, may be external or internal
2. _____: sense changes and react, may be internal or external
3. _____: increase body size
4. _____: cells reproduce and to produce offspring
5. _____: breaking food into useable forms for absorption
6. _____: all physical and chemical changes in the body; including absorbing nutrients and changing them into what we need
7. _____: removal of wastes
8. _____: whole body outside skin inside skin; all the way to microscopic level

{Which of the above is NOT necessary to maintain life?}

III. Maintenance of Life

A. Survival Needs: environmental factors for life

1. _____: most abundant chemical in body, transports substances, and used for metabolic reactions.
2. _____: contain chemicals used for energy and construction of a cell. Carbohydrates and lipids are used for energy. Proteins and lipids are used for construction of the cell. Minerals and vitamins are needed for chemical reactions.
3. _____: used in chemical reactions that releases energy from food
4. _____: must maintain temp of 37°C (98.6°F) for metabolic reactions to perform as they should
5. _____: breathing and the exchange of $O_2$ and $CO_2$ in the lungs depend on atm. pressure

B. _____: maintaining a stable internal environment.

Described in example below. Use this to fill in

How is this done?

1. The _____ _____: what is considered normal
2. _____: muscles or glands that respond or react
3. _____ _____: bodies response in the opposite direction (reverse change in internal environment)

Example: Normal body temperature is 37°C/ 98.6°F. (the Set Point). When you are cold you begin to shiver, when your muscles (the Effectors) contract they release heat and your internal body temperature rises (Negative feedback response). The opposite happens when you are hot. When you sweat, the sweat glands (the Effectors) release perspiration onto your skin, the air dries it and pulls away the heat dropping your body temperature (Negative feedback response).

IV. Levels of Organization: Larger body parts are made of smaller parts

1. Chemicals: Atoms-Molecules-Macromolecules
2. _____: parts within the cell (examples: ribosomes & mitochondria)
3. _____: basic unit of life
4. *_____: layers of cells with common function
5. *_____: different groups of tissues with specialized functions
6. *_____ _____: groups of organs that work together
7. *_____: organ systems put together

V. Organization of the Body

A. Body Cavities – highlight yellow JUST CAVITIES!

a. _____portion: head, neck, and trunk (Viscera-organs within the cavity)

i. _____cavity

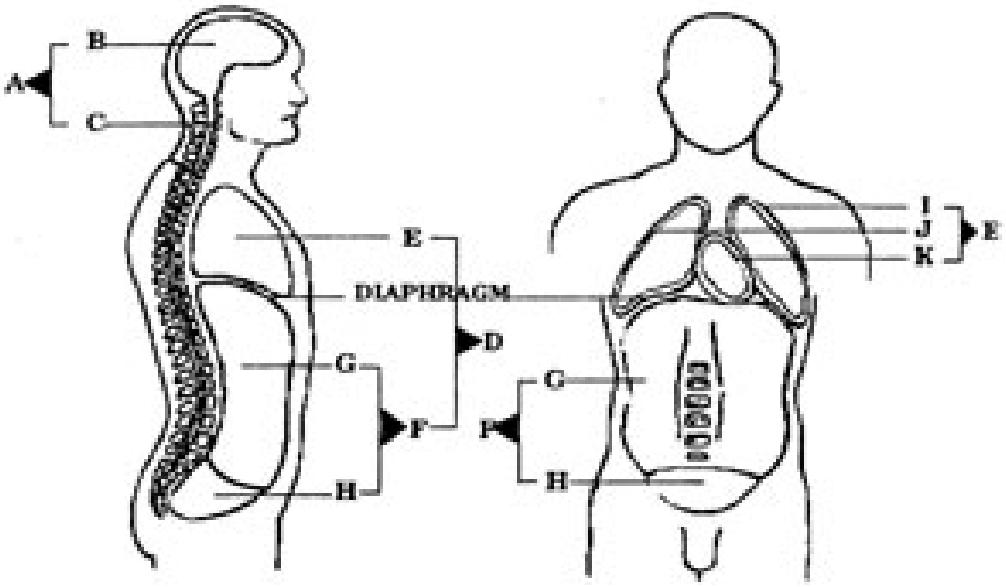
1. _____ cavity-brain
2. _____ canal-spinal cord

ii. _____cavity

_____cavity: lungs, heart, and esophagus

1. Abdominopelvic cavity:
   a. _____-stomach, intestines, liver, spleen, and kidneys.
   b. _____: bladder, rectum, and reproductive organs

b. _____ portion: legs and arms




VI. Organ Systems

1. Body coverings

a. _____

1. Function: regulate body temperature, _____
2. Organs: _____, hair, nails, glands

b. Support/Movement

1. _____
   i. Function: framework
   ii. Organs: _____
2. _____
   1. Function: _____, posture, body heat
   2. Organs: _____

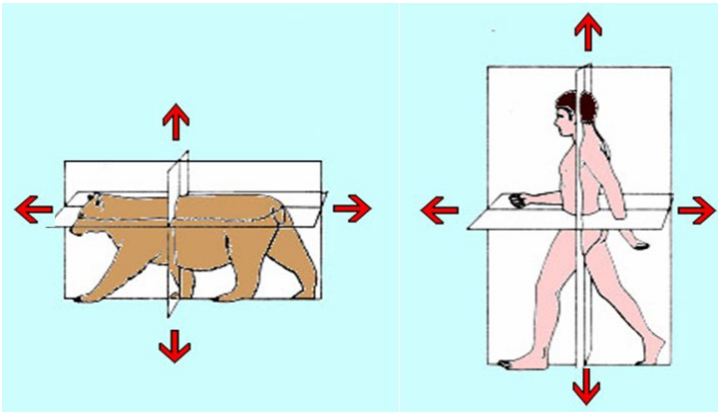
c. Integration/Coordination

1. _____
   1. Function: _____, communication
   2. Organs: brain, spinal cord, _____, sense organs (eyes, ears, taste…)
2. _____
   1. Function: _____
   2. Organs: _____ (pituitary, thyroid, adrenal, reproductive…)

d. Transport
    1. _____
        i. Function: _____ of substances
        ii. Organs: _____, vessels, blood
    2. _____
        1. Function: movement of _____ and fluids, _____
        2. Organs: lymph nodes, thymus, _____
e. Absorption/Excretion
    1. _____
        i. Function: breakdown and _____ nutrients
        ii. Organs: mouth…_____…intestines
    2. _____
        i. Function: _____ in, Carbon dioxide out
        ii. Organs: _____…trachea…lungs
    3. _____
        i. Function: remove _____
        ii. Organs: kidneys, _____, urethra
f. _____
    i. Function: to produce _____
    ii. Organs: a. Male: testes…penis
        b. Female: ovaries…uterus

VII. Anatomical Terminology

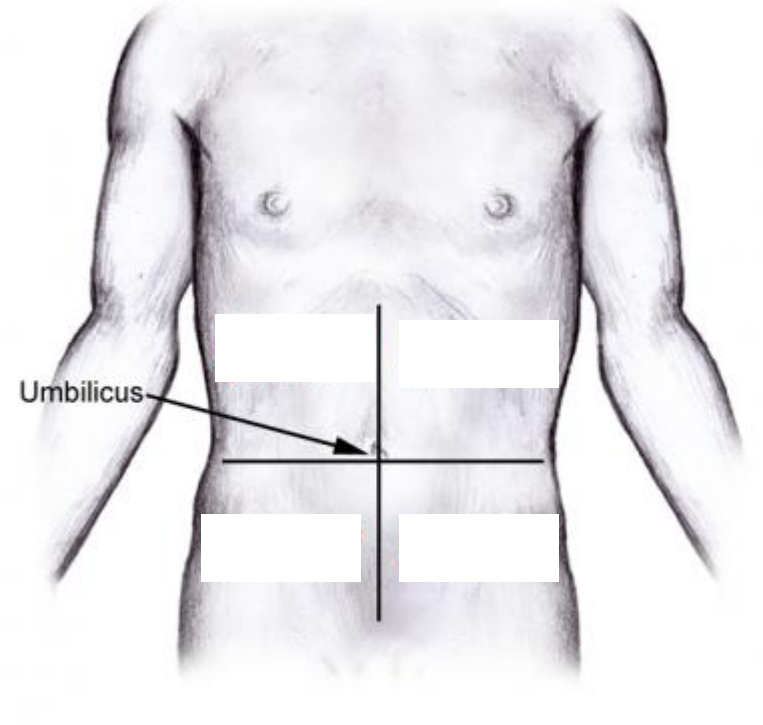
1. _____ _____: Body is standing erect; face forward, arms at sides and palms forward.
2. Body Sections
    a. _____: divides body into _____ right and left portions
    b. _____: divides the body into _____ (towards the head) and _____ (towards the feet) portions
    c. _____: divides the body into _____ (toward the front/ventral) and _____ (toward the back/dorsal) portions



Directional Terminology

a. _____: lying down face up
b. _____: lying down face down
c. _____:toward head
d. _____: toward tail
e. _____: above
f. _____: below
g. _____/_____: front or belly side
h. _____/_____: back
i. _____: towards middle
j. _____: away from middle
k. _____: towards trunk (limbs)
l. _____: away from trunk (limbs)
m. _____: close to surface
n. _____: farther from surface

4. Abdominopelvic quadrants




5. Abdominopelvic regions