NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Pd.\_\_\_\_

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**Anatomy & Physiology**

Ch. 1 - The Human Body: An Orientation

**An Overview of A&P** *(pp. 2-3)*

*Of the two complementary branches of science providing the concepts that help understand the human body, anatomy has appeal because it is concrete – it can be seen, felt, and examined closely. No imagination is needed.*

*Physiology is explainable only in terms of the underlying anatomy.*

*To simplify the study of the body, when referring to body structures and/ or physiological values, i.e.) referring to, or comparing bone characteristics, organ volumes or sizes, body temperatures, heart rates, blood pressures, blood pH, and etc., we assume that we are talking about a healthy . . .*

*reference male: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

or

*reference female:* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Definition of Anatomy & Physiology

Anatomy –

Physiology –

1. Determine if each of the following would represent an Anatomical (A) or a Physiological (P) procedure,

\_\_\_\_\_ making “sections” through an organ to observe its structure

\_\_\_\_\_ examining chemical and physical events in living systems

\_\_\_\_\_ determine pH, sugar, or O2 levels in a blood sample

\_\_\_\_\_ viewing tissue through a microscope

\_\_\_\_\_ examining function, how something works, in any part, at any level, of/in the body

\_\_\_\_\_ comparing composition of tissues/organs

\_\_\_\_\_ examining the surface of an organ, or a bone

1. Identify the subdivisions of anatomy with the best description.
2. surface anatomy 3. regional anatomy 5. gross anatomy
3. systemic anatomy 4. microscopic anatomy 6. developmental anatomy

\_\_\_\_\_ examining without making “sections” or “cuts”

\_\_\_\_\_ study of the abdominal region and organs/parts within it; may involve more than one system

\_\_\_\_\_ study of structures visible w/ naked eye

1. surface anatomy 3. regional anatomy 5. gross anatomy

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2. systemic anatomy 4. microscopic anatomy 6. developmental anatomy

\_\_\_\_\_ study of developmental stages from fertilization to adult

\_\_\_\_\_ nervous system and organs/parts of may involve more than one region

\_\_\_\_\_ study of structure too small to see w/o scope

\_\_\_\_\_ embryology

\_\_\_\_\_ examining a large specimen – a brain, heart or bone

\_\_\_\_\_ study of all structures in one specific region

\_\_\_\_\_ all structures of one system

\_\_\_\_\_ usually involves study on a cellular level

\_\_\_\_\_ internal structures as they can be recognized from the skin surface

1. Subdivisions of microscopic anatomy include:

histology: (his- = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; -ology = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

cytology: (cyt- = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; -ology = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

*Physiology often focuses on events at the cellular or molecular level. The body’s abilities depend on the cells, and the cells’ abilities depend on chemical reactions.*

*Physiology also rests on principals of physics, which help to explain electrical currents, blood pressure, and the muscles using bones to cause body movements.*

1. Subdivisions of physiology include: *(Define/Describe each)*

cardiovascular physiology –

renal physiology –

neurophysiology –

muscle physiology –

hepatic physiology –

1. Relationship between Anatomy and Physiology:

*Although it is possible to study anatomy and physiology individually, they are really inseparable because function always reflects structure.*

*What a structure can do depends on its specific form or design.*

The principle of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The structure determines what function can occur, therefore, if the structure changes, the function

must also change.

**Understanding the Language of Anatomy & Physiology**

Most terms related to medicine and anatomy studies are derived from languages of Greek and Latin – often using a root word having its meaning, and adding either a prefix or suffix, or both, indicating the explanation of the term.

Many terms we use seem to be merely prefixes added to suffixes, having no clear “root” word.

**Prefix:** A prefix is placed at the beginning of a word to modify or change its meaning. Pre means "before." Prefixes may also indicate a location, number, or time.

**Root:** central part of a word.

**Suffix:** The ending part of a word that modifies the meaning of the word. Example: homeless. Root = 'home' and the suffix is 'less'. Suffixes may also refer to a condition, disease, disorder, or procedure.

**Examples:**

ana/tomy: - Greek word *anatemnō*, "I cut up, cut open"; *ana*, "on, upon"; *-tomy*, to cut into

* no real “root” word but derived from the Greek word anatemnō
* the prefix *a-/an*- usually means “without or not” yet doesn’t really apply in this case due to the Greek word’s spelling and usage of the *ana-* as a prefix
* the suffix is *–tomy*

cyt/ology - *cyt-*, prefix meaning “cell, or having to do with cells”; *-logy*, suffix meaning “study of”

* no “root” word

cardio/vascul/ar - root word *vascul/o*, “vessel” (i.e. artery/vein)

* prefix *cardi/o*, “heart”
* suffix *–ar*, “pertaining to”