***Laboratory Manual for Anatomy and Physiology, 5e* (Wood)**

**Main Exercises**

**Exercise 1: Laboratory Safety**

**Exercise 1: Pre-lab Questions**

1) All of the following are necessary guidelines to ensure that the laboratory is a safe environment EXCEPT which statement?

A) No eating is allowed in the laboratory, however drinks are allowed.

B) Never perform an experiment without your instructor's permission.

C) Wear shoes at all times in the laboratory.

D) Only students enrolled in the course are allowed in the laboratory.

Answer: A

Explanation:

B) Experiments should not be started until the instructor gives permission. Also, changes to any experiment that appear in this manual are not allowed.

C) No open-toed shoes should be worn in the laboratory.

D) Anyone who is not enrolled in the course is not allowed to enter the laboratory.

2) The following guidelines should be followed when working with body fluids EXCEPT which statement?

A) Always assume that a body fluid can infect you with a disease.

B) Always wear gloves and safety glasses when working with body fluids.

C) Clean up all body-fluid spills with soap and water.

D) Work only with your own body fluids.

Answer: C

Explanation:

A) Putting this safeguard into practice will prepare you for working in a clinical setting.

B) Never allow body fluids to touch your unprotected skin, therefore one should always wear gloves and safety glasses.

D) Collecting and experimenting on body fluids from another individual is beyond the scope of this course.

3) The following guidelines will protect you from chemical hazards EXCEPT which statement?

A) Most chemicals are safe to handle with bare hands.

B) When mixing solutions always add a chemical to water; never add water to the chemical.

C) Always use a spoon or spatula to take a dry chemical from a large storage container.

D) Do not return unused portions of chemicals to their original container.

Answer: A

Explanation:

B) By adding a chemical to water you reduce the chance of a strong chemical reaction occurring.

C) Never shake a dry chemical out of its jar; this may result in dumping the entire container of chemical onto yourself and/or work station.

D) Always dispose of excess chemicals as directed by your instructor.

4) The main instrument that you will use to study anatomy is a \_\_\_\_\_\_\_\_.

A) water bath

B) scalpel

C) microscope

D) microcentrifuge

Answer: C

Explanation:

A) A water bath is used to incubate laboratory samples.

B) A scalpel is used only in dissections.

D) A microcentrifuge is used to study blood and urine samples.

5) All of the following are considered to be a hazardous waste EXCEPT \_\_\_\_\_\_\_\_.

A) blood

B) urine

C) a preserved specimen

D) a salt solution

Answer: D

Explanation:

A) Blood is considered to be a hazardous waste.

B) Urine is a body fluid and is considered a hazardous waste.

C) Preservatives used to preserve animal specimens are irritants and are considered to be a hazardous waste.

**Exercise 1: Post-lab Questions**

1) All of the following are considered a hazardous waste EXCEPT \_\_\_\_\_\_\_\_.

A) broken glass

B) urine

C) a salt solution

D) a preserved specimen

Answer: C

Explanation:

A) Broken glass is considered a hazardous waste and needs be disposed properly.

B) Urine is a body fluid and therefore is considered to be a hazardous waste.

D) Preservatives are considered irritants and are considered a hazardous waste.

2) All of the following are proper guidelines for using a microscope EXCEPT which statement?

A) Use one hand to carry the microscope.

B) Use only cleaning solution provided by your laboratory instructor to clean the microscope lenses.

C) Use only special lens paper to clean the lenses of the microscope.

D) Unplug the microscope by pulling on the plug, not by tugging on the electrical cord.

Answer: A

Explanation:

B) An unapproved cleaning agent may dissolve the adhesives used in the lenses.

C) Other papers and cloths may scratch the optical coatings on the lenses.

D) Pulling on the cord may loosen wires inside the cord, which can cause an electrical short and possibly an electrical shock to anyone touching the cord.

3) Which of the following can be disposed of in the sink?

A) saliva

B) blood

C) salt solution

D) preservative

Answer: C

Explanation:

A) Saliva is a body fluid and is considered a hazardous waste.

B) Blood is a body fluid and is considered a hazardous waste.

D) Preservatives are considered to be hazardous waste and need to be properly disposed of.

4) Which of the following require wearing gloves to protect your skin?

A) water bath

B) microscope

C) chemicals

D) none of the above

Answer: C

Explanation:

A) Using a water bath does not require one to wear gloves.

B) Using a microscope does not require one to wear gloves.

D) One of the above answers is the correct answer.

5) Which of the following is a common piece of equipment used in dissecting preserved specimens?

A) microscope

B) microcentrifuge

C) water bath

D) scalpel

Answer: D

Explanation:

A) A microscope is used for viewing prepared tissues on slides.

B) A microcentrifuge is used to separate blood or urine samples.

C) A water bath is used to incubate laboratory samples at specific temperatures.

**Exercise 2: Introduction to the Human Body**

**Exercise 2: Pre-lab Questions**

1) Which of the following is the best definition of physiology?

A) the study of the structure of the human body

B) the study of the tissues and organs of the human body

C) the study of organ systems and organs of the body

D) the study of how the body functions at the various levels of organization

Answer: D

Explanation:

A) Anatomy is the study of the structures of the human body.

B) This is part of physiology, the study of the tissues and organs, however when studying physiology it is important to start at the cellular level and work up to the highest level of organization.

C) Understanding physiology at the cellular level, one will be able apply that knowledge to understanding how physiology functions at each higher level. We always start with the functional unit of each system and work our way up to the overall function of the organism.

2) Which of the following regions corresponds to the lower back?

A) thoracic

B) lumbar

C) cephalic

D) gluteus

Answer: B

Explanation:

A) This term refers to the thorax or chest.

C) This term refers to the head.

D) This region refers to the buttock.

3) The right lung lies in the \_\_\_\_\_\_\_\_ cavity.

A) dorsal

B) percardial

C) pleural

D) mediastinum

Answer: C

Explanation:

A) There is no dorsal cavity, the spinal cavity is found on the dorsal side.

B) The pericardial cavity surrounds the heart.

D) The mediastinum separates the pleural cavities.

4) Cytology would be best defined as a study of \_\_\_\_\_\_\_\_.

A) the gross structures of the body

B) cell chemistry

C) cells

D) tissue

Answer: C

Explanation:

A) Cytology is the microscopic study of cells.

B) Cytology is the anatomical study of cells.

D) Histology is the study of tissues.

5) A cut that separates anterior and posterior structures.

A) transverse

B) frontal

C) midsagittal

D) parasagittal

Answer: B

Explanation:

A) This is a cut that separates superior from inferior structures.

C) This is a cut that divides into right and left equal halves.

D) This is a cut that separates the body into nearly equal halves.

**Exercise 2: Post-lab Questions**

1) All of the following may be studied by microanatomists EXCEPT for \_\_\_\_\_\_\_\_.

A) a muscle cell

B) the abdominal muscles

C) the retina

D) a biopsy of epithelial tissue

Answer: B

Explanation:

A) Anything that is too small to be seen by the naked eye is studied by microanatomists.

C) The retina is too small to be seen by the naked eye, therefore it is studied with a microscope.

D) Epithelial tissue cells would be too small to see without the aid of a microscope.

2) The maintenance of a relatively steady internal environment through physiology work is termed \_\_\_\_\_\_\_\_.

A) positive feedback

B) homeostasis

C) negative feedback

D) integration

Answer: B

Explanation:

A) This type of feedback system amplifies the effects of a system.

C) This type of feedback system negates the effects of a system.

D) The central nervous system integrates information from the sensory nervous system and then sends out commands through the motor nervous system.

3) The heart is found at what level of organization of the cardiovascular system?

A) cellular

B) organ

C) tissue

D) chemical

Answer: B

Explanation:

A) Cardiac muscle cells are at the cellular level of organization.

C) Cardiac muscle is a type of muscle tissue.

D) Protein contractile fibers are at the chemical level of organization.

4) Histology would be best defined as a study of \_\_\_\_\_\_\_\_.

A) cells

B) cell chemistry

C) the gross structures of the body

D) tissues

Answer: D

Explanation:

A) Cytology is the study of cells.

B) Cell chemistry would be included in the physiological study of cells.

C) Gross anatomy studies the larger structures of the body that can be seen without the aid of a microscope.

5) Which of the following is the best definition of anatomy?

A) the study of human growth and development

B) the study of the body structures

C) the study of the tissues and organs of the human body

D) the study of the function of the human body

Answer: B

Explanation:

A) This is the study of development and reproduction.

C) This is the anatomical study of just the tissues and organs.

D) Physiology studies the functions of the human body.

6) Which structure is medial to the eyes?

A) ears

B) shoulders

C) nose

D) eyebrows

Answer: C

Explanation:

A) The ears are lateral to the eyes.

B) The shoulders are lateral to the eyes.

D) The eyebrows are superior to the eyes.