



School of Undergraduate Studies
Social, Behavioral, Mathematical, and Natural Sciences

MIDTERM EXAMINATION

INSTRUCTOR NAME: Paula S. Strickland, Ph.D.
COURSE NAME: Human Health and Disease BIOL 301
SECTION NUMBER: 6980
DUE DATE: Sunday, October 14, 2018 by 11:59 PM
SUBMIT to: Answer Sheet to Assignment Folder - Midterm Exam

IMPORTANT: STUDENT PLEASE COMPLETE ALL ANSWERS ON THE ANSWER SHEET (ATTACHED IN THIS DISCUSSION) AND SUBMIT THE ANSWER SHEET DOCUMENT TO YOUR ASSIGNMENT FOLDER “Midterm Exam”
IMPORTANT: I WILL NOT READ ANY SUBMISSIONS THAT ARE SUBMITTED IN THIS DOCUMENT.

GENERAL INSTRUCTIONS: This midterm examination is worth 100 points. There are three (3) sections: Multiple choice (50 points), Fill-in-the-blank (30 points), and Short Answer (20 points). Please answer all questions in each section.

Read all instructions carefully.

****When answering all questions, use the Answer Sheet provided in the Discussion.**

Multiple Choice Questions: Select the best answer for the items below. Each question is worth 2 points. Place your answer on the student answer sheet.

1. A reaction in which simple compounds are assembled into more complex compounds is **most accurately** described as a(n)
 - A) Anabolic reaction
 - B) Metabolic reaction
 - C) Catabolic reaction
 - D) Homeostatic reaction

2. There are numerous levels of organization in the body. The correct order from complex to most simple is
 - A) Organ, tissue, cell, organism, system
 - B) Cell, tissue, organ, system, organism
 - C) Organism, tissue, cell, system, organ
 - D) Organism, system, organ, tissue, cell

3. A microscopic channel that carries blood to tissues is called
 - A) Artery
 - B) Vein
 - C) Vacuole
 - D) Capillary

4. The study of body functions is called
 - A) Catabolism
 - B) Physiology
 - C) Anatomy
 - D) Organic

5. Which example demonstrates the principle of negative feedback?
 - A) A decrease in blood sugar stimulates the release of a hormone that further decreases blood sugar.
 - B) A decrease in room temperature activates a thermostat, which further decreases heat output by a furnace.
 - C) A rise in blood calcium levels stimulates the release of a hormone that lowers blood calcium levels.
 - D) A rise in estrogen levels stimulates the production of a hormone that stimulates estrogen production.

6. Which of the following is NOT a function of the skeleton?
- A) Blood cell production
 - B) Protection of delicate structures
 - C) Sodium storage
 - D) Providing a firm framework for the body
7. In a bitterly cold situation the human body responds to cold by
- A) Shutting down desire to eat
 - B) Increased appetite
 - C) Sweating
 - D) Breaking down stored energy
8. A chemical bond formed by the sharing of electrons is described as a(n)
- A) Ionic bond
 - B) Covalent bond
 - C) Mixture
 - D) Coordinate bond
9. Which of the following is NOT an organic compound?
- A) Salt
 - B) Water
 - C) Zinc
 - D) All the above
10. Proteins are complex molecules composed of
- A) Calcium
 - B) Glucose
 - C) Amino acids
 - D) Water
11. The BRAIN Initiative focus is on
- A) Synapses
 - B) Neural circuits
 - C) Technology
 - D) All of the above

12. Skeletal muscle, smooth muscle, and cardiac muscle all exhibit
- A) Two pump system
 - B) Hormone secretion
 - C) Excitability
 - D) All the above
13. Small bodies within cells involved in the manufacture of proteins are
- A) Ribosomes
 - B) Nucleoli
 - C) Calcium
 - D) Centrioles
14. Two cells vary in the amount of energy they require. One cell, a muscle cell, must generate large supplies of ATP. The other cell, a skin cell, requires very little ATP. Based solely on information provided in this question, these two cells would differ in the abundance of
- A) Mitochondria
 - B) Lysosomes
 - C) Vesicles
 - D) Golgi apparatus
15. Endocrine glands secrete
- A) Digestive juices
 - B) Mucus
 - C) Tears
 - D) Hormones
16. Spongy bone is found
- A) Within the medullary cavity
 - B) In bone epiphyses
 - C) Surrounding haversian canals
 - D) Exclusively in long bones
17. The human sensor receptors involved in detecting damage or pain
- A) Nocireceptors
 - B) Chemoreceptors
 - C) Photoreceptors
 - D) Thermoreceptors

18. What effect would a large increase in cortisol have on glucagon and insulin secretion?
- A) Both insulin and glucagon would be increased.
 - B) Both insulin and glucagon would be decreased.
 - C) Insulin would be decreased and glucagon would be increased.
 - D) Insulin would be increased and glucagon would be decreased.
19. Which of the following is NOT a neurotransmitter?
- A) Acetylcholine
 - B) Dopamine
 - C) Dermatome
 - D) Noradrenaline
20. Which of the following is a special sense?
- A) Pressure
 - B) Taste
 - C) Touch
 - D) Proprioception
21. Which of the following is NOT a product of the adrenal gland?
- A) Cortisol
 - B) Aldosterone
 - C) Progesterone
 - D) Epinephrine
22. A bundle of muscle fibers is called a(n)
- A) Fascicle
 - B) Sheath
 - C) Fascia
 - D) Epimysium
23. Exercise results in
- A) Dilation of blood vessels
 - B) A decrease in the number of mitochondria
 - C) Muscle atrophy
 - D) An increase in the resting heart rate

24. The knuckle is an example of a:
- A) Hinge joint
 - B) Saddle joint
 - C) Condylloid joint
 - D) Plane joint
25. A substance that can increase heart rate
- A) Nicotine
 - B) Caffeine
 - C) Calcium
 - D) All of the above

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FILL-IN THE BLANK SECTION

INSTRUCTIONS: Provide the best answer for the items below. Each question is worth 2 points. This section is worth 30 points. ****Do not enter your answers here.**** Type in your best answer on the Answer Sheet provided in the Discussion.

26. _____ is a vitamin that sunlight on the skin typically triggers within the body.
27. The specific cell type that produces bone tissue is called _____.
28. The four components of a negative feedback loop _____.
29. Synovial joints of the body are classified as _____ joints.
30. During muscle metabolism if oxygen is not present pyruvic acid is converted to _____.
31. A cancer that results in abnormal production of white blood cells is _____.
32. A gentle touch is detected by touch receptors called _____.

33. Your skin is part of the _____ system.
34. The rib cage primarily protects the _____ and _____.
35. _____ is basically the diffusion of water from regions of higher concentration to regions of lower concentration. It aids in blood pressure regulation.
36. Cortisol, corticosterone, and cortisone are in what chemical class of endocrine glands? _____.
37. Bleach has a pH of 13 is it considered an acid or base? _____.
38. The system that includes the spinal cord is the _____ system.
39. The fluid that circulates around the brain and spinal cord is called _____.
40. Inflammation of the brain is called _____.

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SHORT ANSWER SECTION

INSTRUCTIONS: Answer each question thoroughly but concisely. You should address the question that is asked. **Do not include "irrelevant" cut and paste content in your answers.** You will receive point deductions for including content that is not relevant to the question. Each question is worth 4 points. This section is worth 20 points.

41. Name and briefly explain four different functions of membrane proteins.
42. If you are on a very restrictive low-carbohydrate diet and developed an acid-base imbalance. (A). Name the likely acid-base disorder. Be as specific as possible. (B). Discuss two ways in which your body will respond to this change in blood pH.
43. Discuss the three specific functions of blood, include an example for each function.

44. Several hormones can interact to affect the response of cells. Discuss the three most common types of interactions/effects on cells. Give one example for each type of effect.

45. Describe how the human brain's "heat-loss" and "heat-gain" centers function.

End of the examination questions.

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