Name _____ I.D. Number _____

# Unit 5 Evaluation

## Biology 2

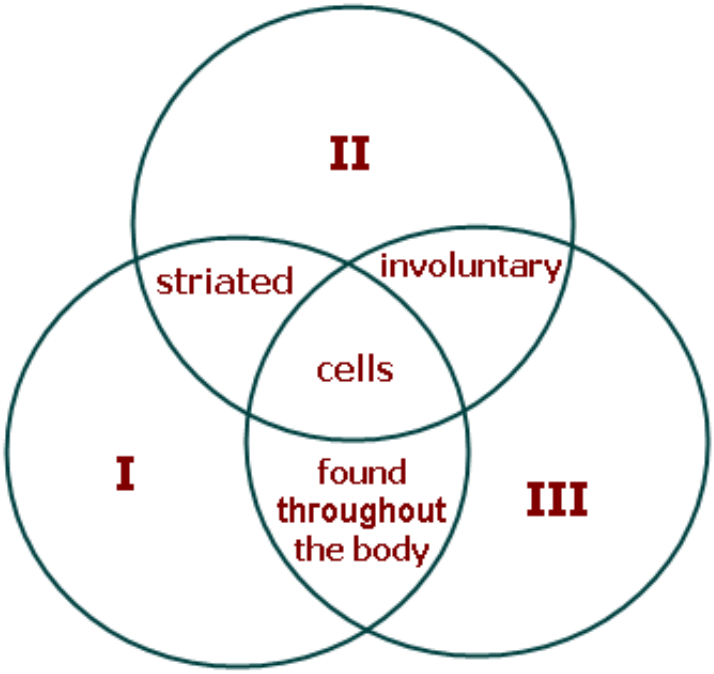
## (SCIH 026 061)

This evaluation will cover the lessons in this unit. It is open book, meaning you can use your textbook, syllabus, and other course materials. You will need to understand, analyze, and apply the information you have learned in order to answer the questions correctly. To submit the evaluation, follow the directions provided.

## Multiple Choice

Select the response that best completes the statement or answers the question.

**Use the following Venn diagram to answer questions 1-3.**




_____ 1. Which type of muscle is labeled I in the Venn diagram?

a. cardiac
b. filament
c. skeletal
d. smooth

_____ 2. Which type of muscle is labeled II in the Venn diagram?

a. cardiac
b. filament
c. skeletal
d. smooth

_____ 3. Which type of muscle is labeled III in the Venn diagram?

a. cardiac
b. filament
c. skeletal
d. smooth

_____ 4. A person living close to the North Pole fractures a bone in December. She finds that it takes an unusually long time to heal. Which best explains why this might occur?

a. Decreased exposure to the Sun results in more calcium released by the skin.
b. Decreased exposure to the Sun results in less vitamin D produced by the skin.
c. Greater exposure to cold results in softer bones.
d. Greater exposure to cold results in bones that are brittle.

_____ 5. What would most likely be the result if one square centimeter of skin on the back of a person's hand was removed in an accident?

a. The person would not be able to feel textures with his palm.
b. The body would not be able to regulate temperature.
c. Organs such as the heart would be exposed.
d. Bacteria could enter the body, causing an infection.

_____ 6. Which of the following correctly sequences the events that occur when a person gets a cut that bleeds?

a. The person bleeds. A scab forms. The blood clots. White blood cells enter the area. Skin cells divide. New cells fill in the area.
b. The person bleeds. The blood clots. A scab forms. White blood cells enter the area. Skin cells divide. New skin cells fill in the area.
c. The person bleeds. The blood clots. New cells fill in the area. A scab forms. Skin cells divide. White blood cells enter the body.
d. The person bleeds. A scab forms. The blood clots. Skin cells divide. White blood cells enter the area. New cells fill in the area.

_____ 7. What might result if osteoblasts were not functioning properly?

a. Cartilage would become infected.
b. Too many blood cells would be produced.
c. Bone cells could not be broken down.
d. Bone growth would be affected.

_____ 8. Which of the following correctly sequences the events of bone repair?

a. A blood clot forms where the break occurred. Cartilage then forms at the break followed by compact bone formation. Spongy bone fills the space.
b. A blood clot forms where the break occurred. Cartilage then forms at the break, followed by spongy bone formation. Finally, compact bone fills the space.
c. Cartilage forms at the break. A blood clot forms where the break occurred followed by compact bone formation. Finally, spongy bone fills the space.
d. Cartilage forms at the break. A blood clot forms where the break occurred, followed by spongy bone formation. Finally, compact bone fills the space.

_____ 9. What would result if the heart were made of skeletal muscle?

a. It would beat according to its own pacemaker.
b. It would not contain any striations when dissected.
c. You would have to think about controlling its beating.
d. It would not be strong enough to pump blood throughout the body.

_____ 10. Leukemia results when an excess of defective blood cells are produced. These defective cells interfere with the production of normal blood cells. Which of the following treatments would most likely help someone with leukemia?

a. blood transfusion
b. bone marrow transplant
c. muscle relaxers
d. skin graft

_____ 11. Which of the following gives rise to the electrical voltage gradient in resting nerve cells?

a. The presence of negatively charged proteins outside the nerve cell causes a difference in charge.
b. The greater number of sodium ions inside the nerve cell creates a difference in charge across the plasma membrane.
c. The inside of nerve cells is more negatively charged than the outside.
d. The inside of nerve cells is more positively charged than the outside.

_____ 12. What happens to a neuron when a stimulus reaches the threshold level?

a. Channels in the plasma membranes open, allowing potassium to move into the cytoplasm to cause a temporary reversal in electrical charges.
b. Channels in the plasma membranes open, allowing sodium to move into the cytoplasm to cause a temporary reversal in electrical charges.
c. The sodium-potassium pump is activated, transporting sodium into the cytoplasm and potassium out of the cytoplasm.
d. Channels in the plasma membranes open, allowing negatively charged proteins to move out of the cytoplasm temporarily.

_____ 13. What is the main difference between the central nervous system (CNS) and the peripheral nervous system (PNS)?

a. The CNS integrates information received from the external environment, and the PNS processes this information.
b. The PNS regulates body temperature, blood pressure, and thirst, while the CNS integrates this information.
c. The CNS processes information, while the PNS carries information to and from the CNS and sensory, muscle, and gland cells.
d. The CNS communicates involuntary communication, while the PNS communicates voluntary information.

_____ 14. What accounts for the fact that the perception of taste is sharply reduced when one has a head cold?

a. Much of what we consider taste is really smell; blocked air passages reduce detection of information.
b. The taste buds can no longer communicate with the olfactory nerve.
c. The air passages are blocked, which prevents communication of the taste buds with the brain.
d. Taste buds have a weakened sensitivity when one has a head cold.

_____ 15. How do caffeine and alcohol affect the nervous system?

a. Both are stimulants.
b. Caffeine is a stimulant and alcohol is a depressant.
c. Caffeine and alcohol increase dopamine release.
d. Caffeine and alcohol bind to adenosine receptors.

_____ 16. How do cocaine and amphetamines affect dopamine?

a. Both cocaine and amphetamines bind to dopamine receptors.
b. Both cocaine and amphetamines increase the number of dopamine receptors.
c. Both cocaine and amphetamines contain dopamine.
d. Both cocaine and amphetamines prevent the reabsorption of dopamine.

_____ 17. In what ways do smoking cigarettes and using cocaine harm the body?

a. They both induce inhibitory neurotransmitters that decrease blood flow, reduce memory, and cause chemical dependence.
b. They both damage the peripheral nervous system by flooding it with dopamine.
c. The artificially elevated levels of dopamine they induce can permanently alter the natural pathways, causing chemical dependence.
d. They both can cause lung cancer.

_____ 18. Which of the following describes symptoms that would likely accompany a drug-induced increase in dopamine?

a. anxiety, increased heart rate, increased blood pressure
b. pupil constriction, decrease in blood pressure, paranoia
c. anxiety, decreased heart rate, increased saliva flow
d. increased peristalsis, increased saliva production, increased heart rate

_____ 19. Which of the following describes functions of the peripheral nervous system?

a. integrates perception, movement, and intellect
b. transmits external stimuli and motor responses
c. regulates body temperature, thirst, and appetite
d. regulates respiration, blood pressure, and heart rate

_____ 20. Which of the following is always an effect of external respiration?

a. an increase in carbon dioxide levels in the blood
b. a decrease in carbon dioxide levels in the blood
c. an increase in the heart rate
d. a decrease in the heart rate

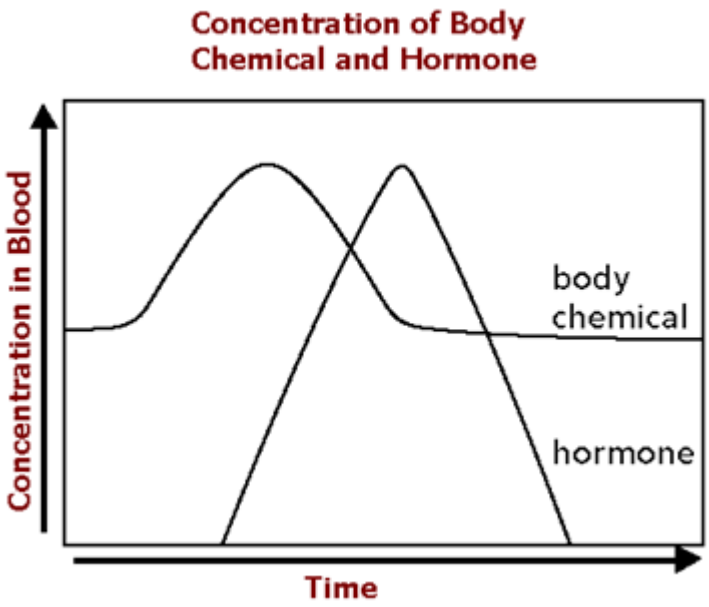
_____ 21. During filtration and reabsorption, which of the following particles never leave the bloodstream?

a. salt
b. water
c. glucose
d. red blood cells

_____ 22. How is salt excreted from the body?

a. through urine alone
b. through urine and breath
c. through sweat and breath
d. through urine and sweat

**Use the following chart to answer questions 23-24.**




_____ 23. What type of system is shown in this chart?

a. reverse feedback
b. positive feedback
c. negative feedback
d. anti feedback

_____ 24. What is likely to have triggered hormone production shown in the chart?

a. the presence of the body chemical
b. a decrease in the body chemical
c. a total lack of the body chemical
d. an increase in the body chemical

_____ 25. Which digestive process(es) occur(s) first?

a. Chemical digestion occurs in the stomach.
b. Mechanical digestion in the esophagus.
c. Chemical and mechanical digestion in the mouth.
d. No digestion occurs at first, food is only moistened.

_____ 26. Once progesterone reaches its targeted tissue, it is able to passively pass into a cell. What is progesterone?

a. an amino-acid hormone
b. a carbohydrate
c. a protein
d. a steroid hormone

_____ 27. Where does most digestion occur?

a. mouth
b. large intestine
c. small intestine
d. stomach

_____ 28. The body regulates availability of sugar to its cells partly through two hormones secreted by the pancreas. Which is the correct description of the production of these two hormones during the time immediately following one meal to just before the next meal 12 hours later?

a. Insulin production decreases and then increases, followed by increasing glucagon production.
b. Glucagon production increases then decreases, followed by insulin increases in production.
c. Insulin production increases then decreases, followed by increases in glucagon production.
d. Glucagon production decreases and then increases, followed by increasing insulin production.

_____ 29. FSH stimulates the production of _____ in the testes.

a. sperm
b. LH
c. testosterone
d. secondary sex characteristics

_____ 30. Which hormones influence estrogen and progesterone levels in the female?

a. LH only
b. testosterone and FSH
c. LH and FSH
d. FSH only

_____ 31. Which hormones are produced by the corpus luteum?

a. high amounts of progesterone and some estrogen
b. high amounts of estrogen and some progesterone
c. FSH and LH
d. testosterone and FSH

_____ 32. As cell division continues into the third day, the embryo is described as a morula. The morula is what kind of structure?

a. a one-celled zygote
b. a solid ball of cells
c. a hollow mass of cells
d. a blastocyst

_____ 33. What is the name of the thin layer that forms a sac around the embryo?

a. the yolk sac
b. the chorion
c. the uterus
d. the amnion

_____ 34. Right before birth, the posterior pituitary gland of the mother releases the hormone oxytocin. The function of this hormone during the birth process is to

a. produce milk for the newborn.
b. make the uterus contract.
c. force the amniotic fluid out of the cervix.
d. start the placental stage.

_____ 35. The ability to problem solve and reason develops during which stage of life?

a. adulthood
b. adolescence
c. childhood
d. infancy

_____ 36. Where does the egg travel immediately after it is released from the ovary?

a. oviduct
b. uterus
c. oocyte
d. vagina

_____ 37. Which of the following is known to be a cause of birth defects?

a. alcohol
b. high-fat foods
c. exercise
d. lack of rest

_____ 38. In which structure is GnRH produced?

a. the testes
b. the anterior pituitary gland
c. the hypothalamus
d. the posterior pituitary

_____ 39. Which of the following interactions is an example of a negative-feedback control system in the human female reproductive cycle?

a. the stimulation of follicles to mature in response to the production of FSH and LH by the anterior pituitary
b. the effect of estrogen produced by a follicle on the LH and FSH produced by the anterior pituitary
c. the transformation of the cells of the ruptured follicle into the corpus luteum
d. the high level of estrogen that causes the anterior pituitary to release a surge of LH

_____ 40. In which of the following ways do normal allergic reactions differ from anaphylactic shock?

a. In anaphylactic shock, the eyes turn red.
b. In anaphylactic shock, the bronchioles contract.
c. During an allergic reaction, histamine is released.
d. During an allergic reaction, tissues become inflamed.

_____ 41. A mysterious illness begins spreading through a population. Scientists are able to isolate a certain bacterium in 90 percent of the cases. Does this evidence satisfy Koch's postulates in identifying the bacteria as the disease-causing agent?

a. Yes, almost all bacteria are pathogenic and can cause disease.
b. No, the bacterium must be isolated in every case of the disease.
c. Yes, the bacterium is present in a statistically significant number of the cases.
d. No, there is no way to prove for certain that the bacterium is causing the disease.

_____ 42. Which of the following often causes most of the symptoms experienced by a person suffering from a bacterial infection?

a. bursting of cells
b. release of toxins
c. destruction of cellular nuclei
d. decrease of intercellular fluids

_____ 43. Which of the following cells are involved in nonspecific immunity?

a. B cells
b. cytotoxic T cells
c. helper T cells
d. neutrophils

_____ 44. An Rh– mother gives birth to an Rh+ child. In the process, some of the child's blood mixes with the mother's blood. The mother develops antibodies against the Rh antigen. A second pregnancy ends in a miscarriage. What type of immunity is this an example of?

a. active immunity
b. interferon immunity
c. nonspecific immunity
d. passive immunity

_____ 45. The malfunction of which body system causes rheumatoid arthritis?

a. cardiovascular system
b. immune system
c. integumentary system
d. skeletal system

## Matching

Match the terms given with their definitions.

a. keratin
b. sebaceous
c. synapse
d. melanin
e. hypothalamus

_____ 46. a small gap between the axon of one neuron and the dendrite of another

_____ 47. regulates body temperature, thirst, appetite and water balance

_____ 48. glands that secrete oil to lubricate the skin and hair

_____ 49. a protein in the outer layers of epidermal cells which waterproofs and protects the cells and tissues underneath

_____ 50. a pigment that absorbs light energy to protect deeper cells from ultraviolet rays

**Carefully check your answers on this evaluation and make any corrections you feel are necessary. When you are satisfied that you have answered the questions to the best of your ability, transfer your answers to an answer sheet. Please refer to the information sheet that came with your course materials.**