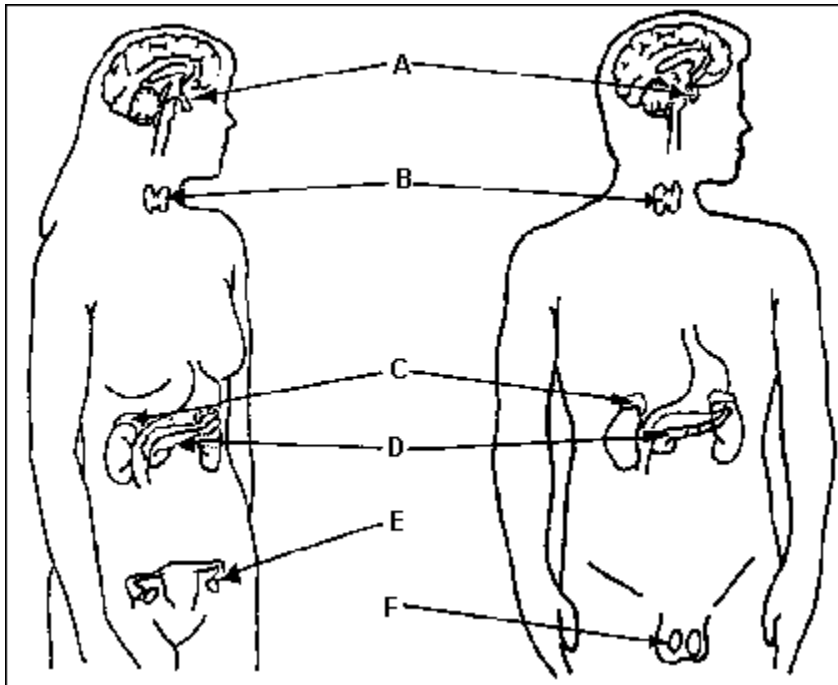


Endocrine System: Practice Questions #1

1.



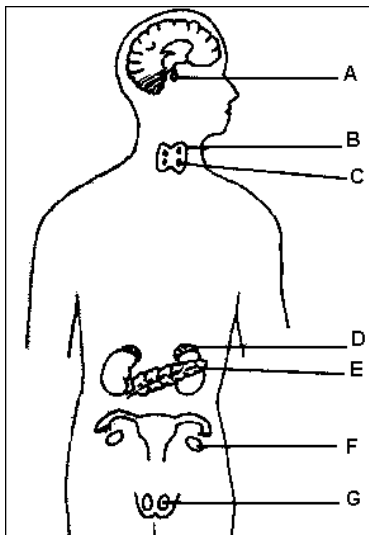
Removing part of gland *D* would most likely result in

- A. a decrease in the secretions of other glands
- B. a decrease in the blood calcium level
- C. an increase in the growth rate of the individual
- D. an increase in the blood sugar level

2. In humans, certain glands produce chemicals that are distributed by the circulatory system and influence various target organs. These glands are classified as

- A. intestinal glands
- B. salivary glands
- C. gastric glands
- D. endocrine glands

3.



Base your answer on the diagram which represents endocrine glands of both sexes and on your knowledge of biology. A malfunction in the hormonal secretions from structure *E* may require a person to

- A. eliminate all carbohydrates from the diet
- B. increase the amount of iodine in the diet
- C. receive daily injections of insulin
- D. undergo surgery to remove the organ

4. Increased perspiration, a higher body temperature, and a rapidly beating heart are all possible responses to a stressful situation. These body responses are most likely a direct result of the interaction of the

- A. digestive and endocrine systems
- B. digestive and respiratory systems
- C. nervous and hormonal systems
- D. nervous and reproductive systems

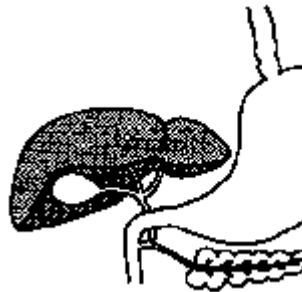
5. Which organ or organ system is most closely associated with the malfunction called diabetes?



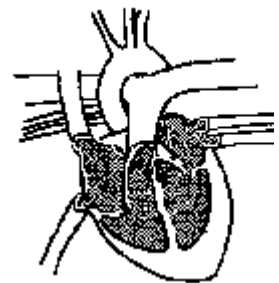
A.



B.



C.



D.

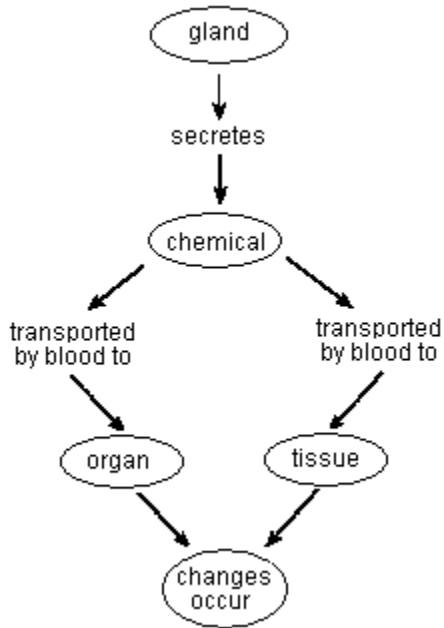
6. A drastic change in the metabolic rate of a human would most likely result from the

- A. oversecretion of the salivary glands
- B. overproduction of auxins
- C. deterioration of the skeletal system
- D. malfunction of the hormonal system

7. When an individual goes without eating for a day, his or her blood sugar level remains about the same throughout the day. This relatively constant condition is maintained by

- A. homeostatic control
- B. egestion
- C. reproduction
- D. growth of cells

8.



An important method of communication between cells is shown in the diagram. What is the chemical referred to in the diagram?

- A. a hormone important in maintaining homeostasis
 - B. an enzyme detected by a cell membrane receptor
 - C. DNA necessary for regulating cell functions
 - D. a food molecule taken in by an organism
9. Which statement describes a feedback mechanism involving the human pancreas?
- A. The production of estrogen stimulates the formation of gametes for sexual reproduction.
 - B. The level of oxygen in the blood is related to heart rate.
 - C. The level of sugar in the blood is affected by the amount of insulin in the blood.
 - D. The production of urine allows for excretion of cell waste.
10. If a human system fails to function properly, what is the most likely result?
- A. a stable rate of metabolism
 - B. a disturbance in homeostasis
 - C. a change in the method of cellular respiration
 - D. a change in the function of DNA
11. An increase in the level of insulin in the blood would most directly result in
- A. a decrease in the amount of glucose in the blood
 - B. a decrease in the amount of protein in the blood
 - C. an increase in the amount of fat in cells
 - D. an increase in the amount of carbon dioxide in cells

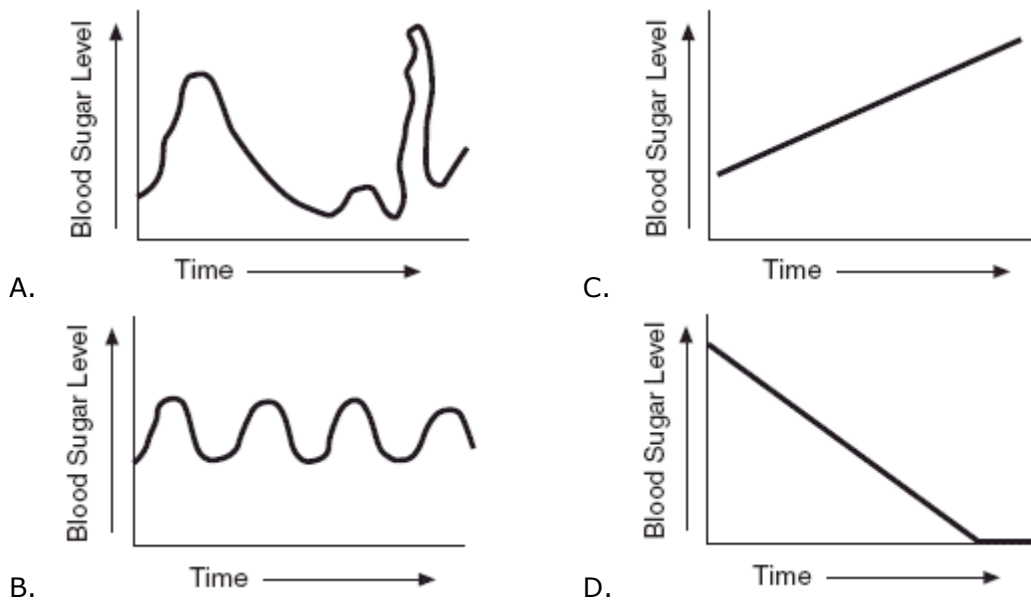
12. Feedback mechanisms are best described as processes that help

- A. reduce hormone levels to below normal in the blood
- B. destroy hormones in the blood
- C. directly control muscle contraction in the leg
- D. keep body conditions near a normal, steady state

13. A characteristic of hormones and enzymes that allows them to work effectively with other organic molecules is their

- A. specific shape
- B. small size
- C. concentration of carbon and hydrogen atoms
- D. high-energy bonds

14. Which graph of blood sugar level over a 12-hour period best illustrates the concept of dynamic equilibrium in the body?



15. The most immediate response to a high level of blood sugar in a human is an increase in the

- A. muscle activity in the arms
- B. blood flow to the digestive tract
- C. activity of all cell organelles
- D. release of insulin

16. The pancreas produces one hormone that lowers blood sugar level and another that increases blood sugar level. The interaction of these two hormones most directly helps humans to

- A. maintain a balanced internal environment
- B. digest needed substances for other body organs
- C. dispose of wastes formed in other body organs
- D. increase the rate of cellular communication

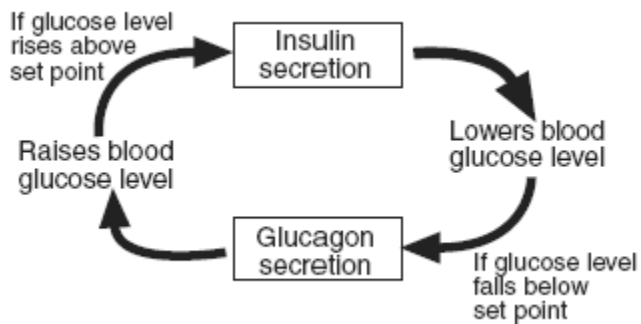
17. Hormones and secretions of the nervous system are chemical messengers that

- A. store genetic information
- B. carry out the circulation of materials
- C. extract energy from nutrients
- D. coordinate system interactions

18. Feedback interactions in the human body are important because they

- A. determine the diversity necessary for evolution to occur
- B. direct the synthesis of altered genes that are passed on to every cell in the body
- C. regulate the shape of molecules involved in cellular communication
- D. keep the internal body environment within its normal range

19. The diagram below represents the actions of two hormones in the human body.



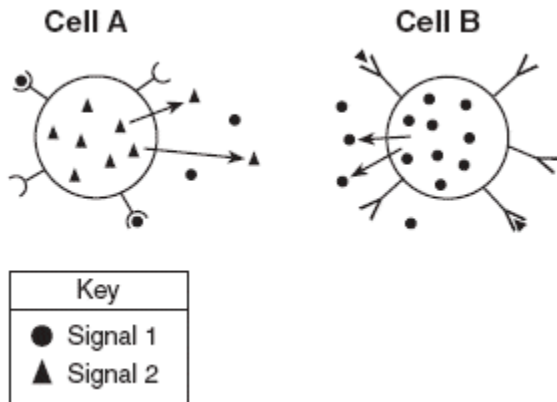
This diagram best illustrates

- A. recombination
- B. feedback
- C. insertion
- D. deletion

20. After a hormone enters the bloodstream, it is transported throughout the body, but the hormone affects only certain cells. The reason only certain cells are affected is that the membranes of these cells have specific

- A. receptors
- B. tissues
- C. antibodies
- D. carbohydrates

21. Cellular communication is illustrated in the diagram below.



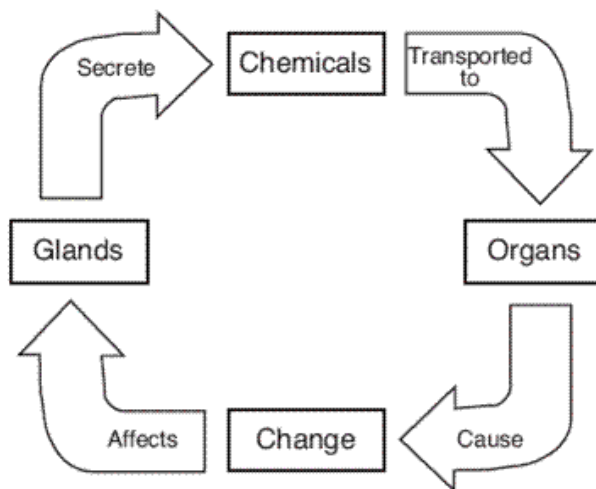
Information can be sent from

- A. cell A to cell B because cell B is able to recognize signal 1
- B. cell A to cell B because cell A is able to recognize signal 2
- C. cell B to cell A because cell A is able to recognize signal 1
- D. cell B to cell A because cell B is able to recognize signal 2

22. Two primary agents of cellular communication are

- A. chemicals made by blood cells and simple sugars
- B. hormones and carbohydrates
- C. enzymes and starches
- D. hormones and chemicals made by nerve cells

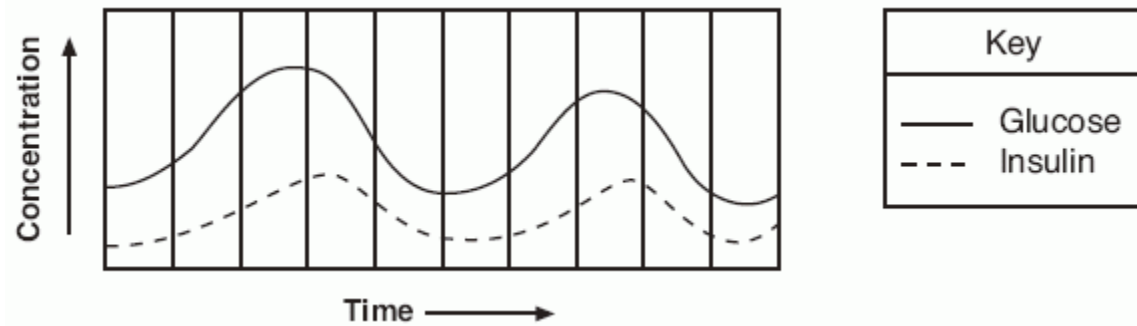
23. The diagram below represents an interaction between parts of an organism.



The term *chemicals* in this diagram represents

- A. starch molecules
- B. DNA molecules
- C. hormone molecules
- D. receptor molecules

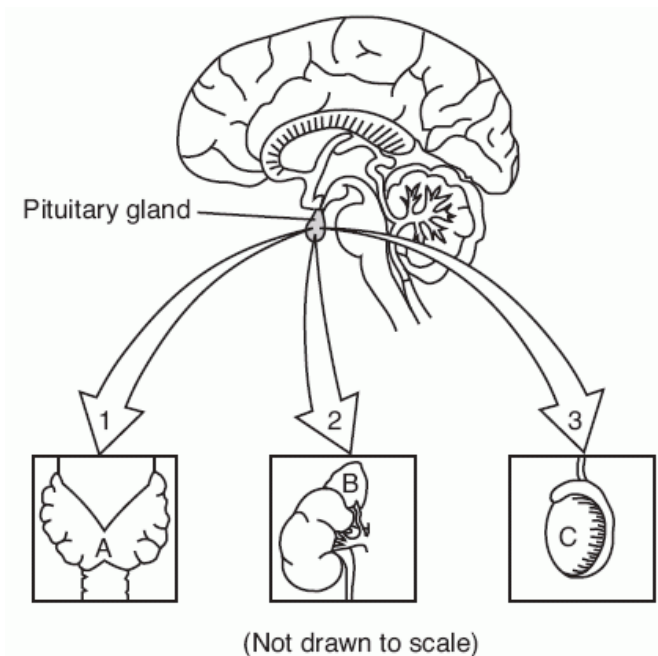
24. The graph below shows the levels of glucose and insulin in the blood of a human over a period of time.



This graph represents

- A. an allergic reaction
- B. an antigen-antibody reaction
- C. maintenance of homeostasis
- D. autotrophic nutrition

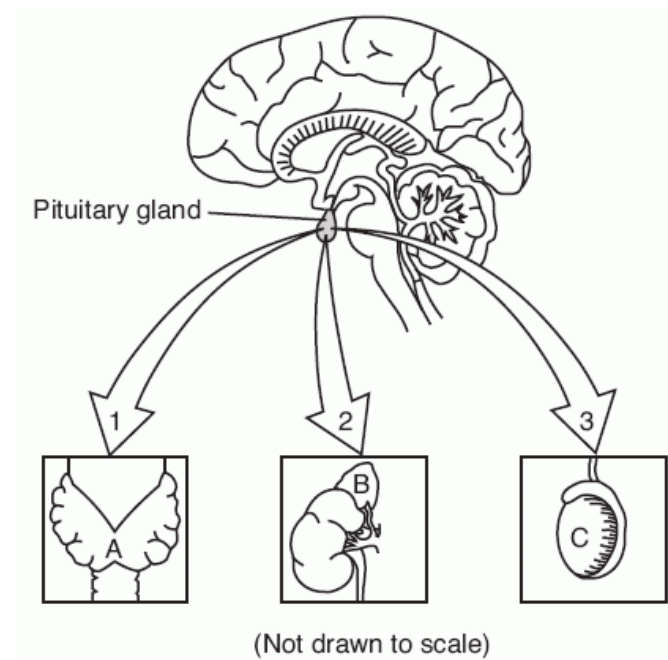
25. Base your answer to the question on the diagram below and on your knowledge of biology. Each arrow in the diagram represents a different hormone released by the pituitary gland that stimulates the gland indicated in the diagram. All structures are present in the same organism.



What would most likely occur if the interaction is blocked between the pituitary and gland C, the site of meiosis in males?

- A. The level of progesterone would start to increase.
- B. The pituitary would produce another hormone to replace hormone 3.
- C. Gland A would begin to interact with hormone 3 to maintain homeostasis.
- D. The level of testosterone may start to decrease.

26. Base your answer to the question on the diagram below and on your knowledge of biology. Each arrow in the diagram represents a different hormone released by the pituitary gland that stimulates the gland indicated in the diagram. All structures are present in the same organism.



Why does hormone 1 influence the action of gland A but *not* gland B or C?

- A. Every activity in gland A is different from the activities in glands B and C.
- B. The cells of glands B and C contain different receptors than the cells of gland A.
- C. Each gland contains cells that have different base sequences in their DNA.
- D. The distance a chemical can travel is influenced by both pH and temperature.

27. Base your answer to this question on the information below and on your knowledge of biology.

In a test for diabetes, blood samples were taken from an individual every 4 hours for 24 hours. The glucose concentrations were recorded and are shown in the data table below.

Blood Glucose Level Over Time

Time (h)	Blood Glucose Concentration (mg/dL)
0	100
4	110
8	128
12	82
16	92
20	130
24	104

How might these results be different if this individual was *not* able to produce sufficient levels of insulin?

- A. The level of blood glucose would be constant.
- B. The average level of blood glucose would be lower.
- C. The maximum level of blood glucose would be higher.
- D. The minimum level of blood glucose would be lower.

28. Base your answer to this question on the information below and on your knowledge of biology.

In a test for diabetes, blood samples were taken from an individual every 4 hours for 24 hours. The glucose concentrations were recorded and are shown in the data table below.

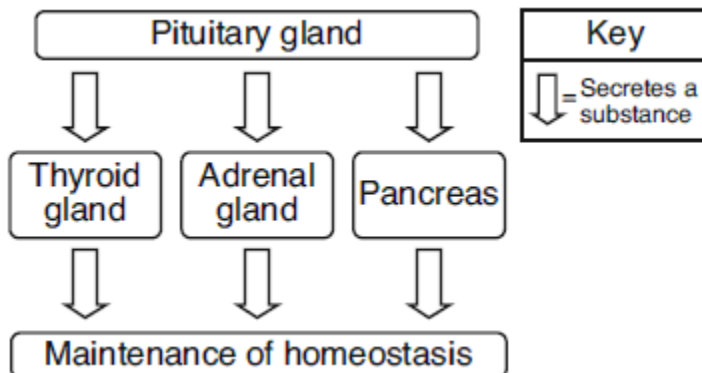
Blood Glucose Level Over Time

Time (h)	Blood Glucose Concentration (mg/dL)
0	100
4	110
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12	82
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24	104

The chemical that is responsible for the *decrease* in blood glucose concentration is released by

- A. muscle cells
- B. guard cells
- C. the ovaries
- D. the pancreas

29. The diagram below illustrates some functions of the pituitary gland. The pituitary gland secretes substances that, in turn, cause other glands to secrete different substances.



Which statement best describes events shown in the diagram?

- A. Secretions provide the energy needed for metabolism.
- B. The raw materials for the synthesis of secretions come from nitrogen.
- C. The secretions of all glands speed blood circulation in the body.
- D. Secretions help the body to respond to changes from the normal state.

30. Which process is most directly responsible for maintaining internal stability in an organism when its environment is constantly changing?

- A. digestion
- B. feedback
- C. reproduction
- D. evolution

31. The ability of the human body to keep blood-sugar levels within a fairly narrow range, despite the intake of meals high in carbohydrates, is an example of

- A. active transport
- B. genetic recombination
- C. homeostasis
- D. digestion

32. Which substances play an important role in communication between cells in a multicellular organism by acting as chemical messengers?

- A. fats
- B. antibiotics
- C. minerals
- D. hormones

33. The maintenance of homeostasis in the body is most directly related to

- A. cellular communication
- B. cycling of energy
- C. aging of the organism
- D. recombination of chromosomes

Answer Key 1 Endocrine

1. D
2. D
3. C
4. C
5. C
6. D
7. A
8. A
9. C
10. B
11. A
12. D
13. A
14. B
15. D
16. A
17. D
18. D
19. B
20. A
21. C
22. D
23. C
24. C
25. D
26. B
27. C
28. D
29. D
30. B
31. C
32. D
33. A