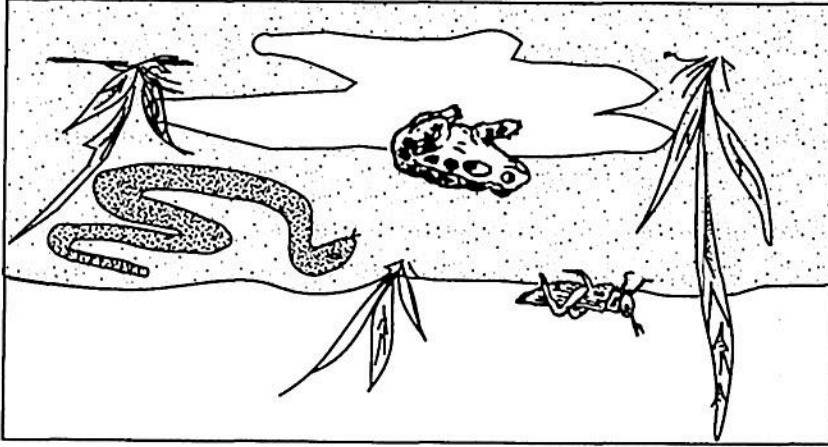


Which organism carries out autotrophic nutrition?
 1) grasshopper
 2) plant
 3) snake
 4) frog



5. Base your answer to the following question on the diagram below.

- 1) water absorption
- 2) chemical digestion
- 3) swallowing
- 4) ingestion

4. Changing the pH value within the human digestive tract would have the greatest effect upon the process of

- 1) fermentation
- 2) transport
- 3) photosynthesis
- 4) regulation

3. Which process is a form of autotrophic nutrition?

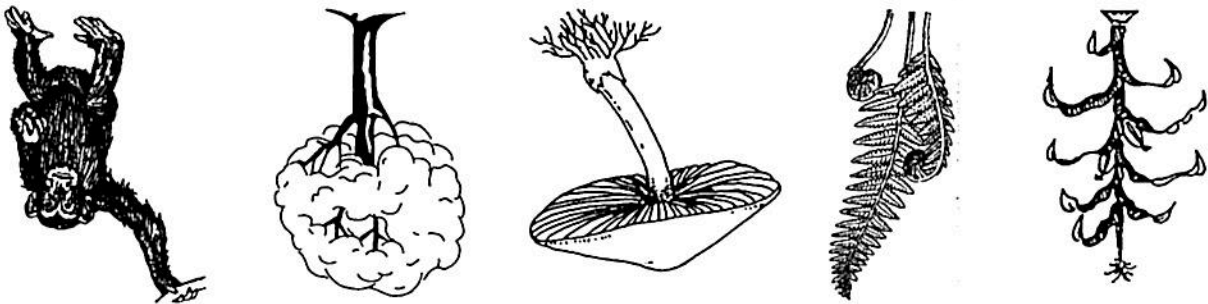
- 1) exchange gases with their environment
 - 2) absorb and circulate materials
 - 3) obtain and process materials needed for other activities
 - 4) remove cellular waste products
2. Nutrition involves those activities by which organisms

- 1) transported downward toward the roots through tubes
- 2) changed directly into proteins
- 3) changed into simple sugars
- 4) transported out of the leaves through the guard cells

1. An iodine test of a tomato plant leaf revealed that starch was present at 5:00 p.m. on a sunny afternoon in July. When a similar leaf from the same tomato plant was tested with iodine at 6:00 a.m. the next morning, the test indicated that less starch was present. This reduction in starch content most likely occurred because starch was

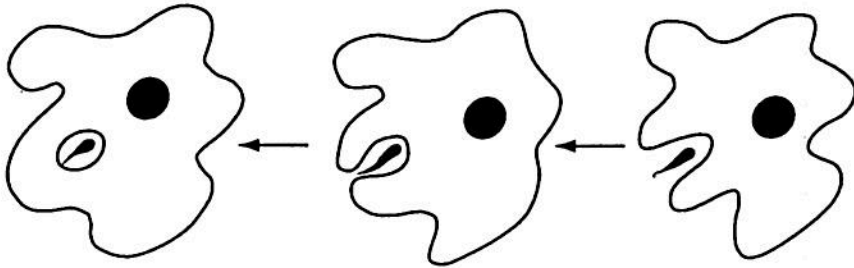
Nutrition Exam

6. Which two organisms represented below are heterotrophic?



- 1) A and B
- 2) B and C
- 3) C and E
- 4) D and E

7. The series of diagrams below represents a process carried out by a unicellular organism.



This process is known as

- 1) replication
- 2) autotrophic nutrition
- 3) phagocytosis
- 4) sporulation

8. All of the cell shapes shown in the diagrams below have the same volume. Which form could absorb nutrients most efficiently and quickly?



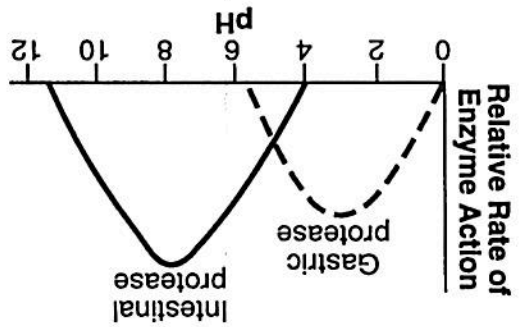
9. A student has a hamburger, French fries, and soda for lunch. Which sequence represents the correct order of events in the nutritional processing of this food?

- 1) digestion → absorption → ingestion → egestion
- 2) ingestion → absorption → digestion → egestion
- 3) ingestion → digestion → absorption → egestion
- 4) digestion → egestion → ingestion → absorption

- 10. The main function of the human digestive system is to
 - 1) rid the body of cellular waste materials
 - 2) process organic molecules so they can enter cells
 - 3) change amino acids into proteins and carbohydrates
 - 4) break down glucose in order to release energy
- 11. Chewing increases the surface area of food, helping to speed up the process of
 - 1) dehydration synthesis
 - 2) chemical digestion
 - 3) intracellular transport
 - 4) mechanical digestion
- 12. Which process increases the surface area of foods prior to chemical digestion?
 - 1) excretion
 - 2) dehydration synthesis
 - 3) diffusion
 - 4) mechanical digestion
- 13. Which process is used by animals to remove ingested foods that can *not* be digested?
 - 1) osmosis
 - 2) reabsorption
 - 3) emulsification
 - 4) egestion

Nutrition Exam

14. Base your answer to the following question on the graph below and on your knowledge of biology.



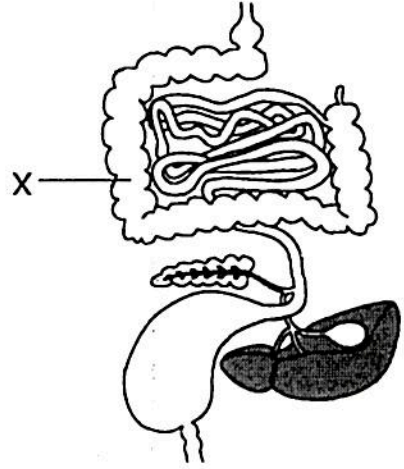
The contents of the small intestine have a basic pH. When gastric protease enters the small intestine, the activity of this enzyme will most likely

- 1) increase, only
- 2) increase and then decrease
- 3) decrease, only
- 4) remain the same

15. The digestion of starch begins in the

- 1) stomach
- 2) small intestine
- 3) mouth
- 4) gallbladder

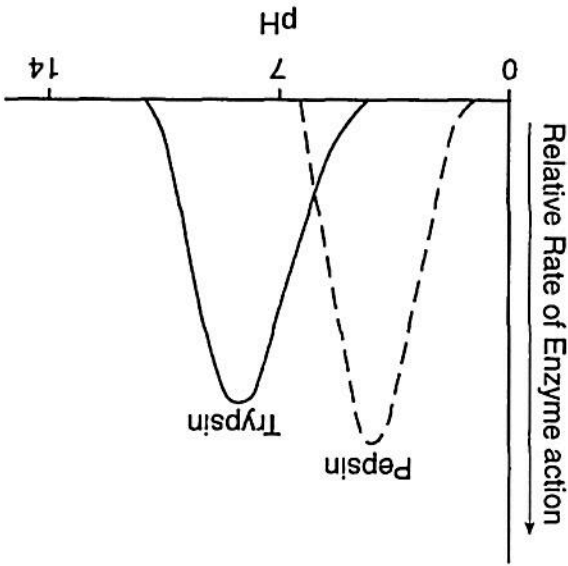
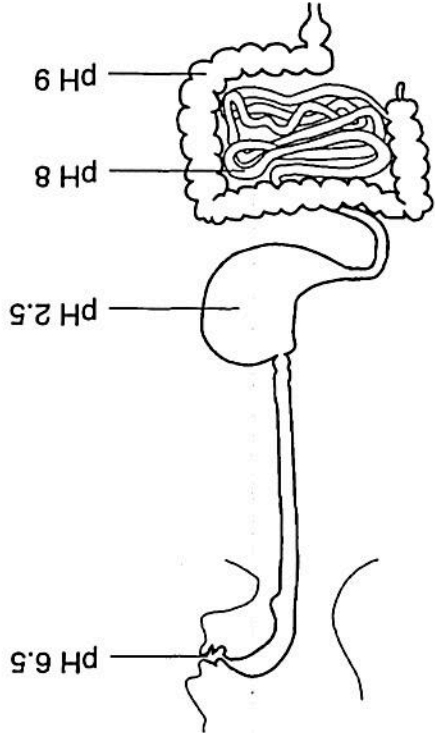
16. The diagram below represents a portion of the human body.



The principal function of structure X is to

- 1) secrete sex hormones
- 2) digest bile
- 3) absorb water
- 4) produce salivary enzymes

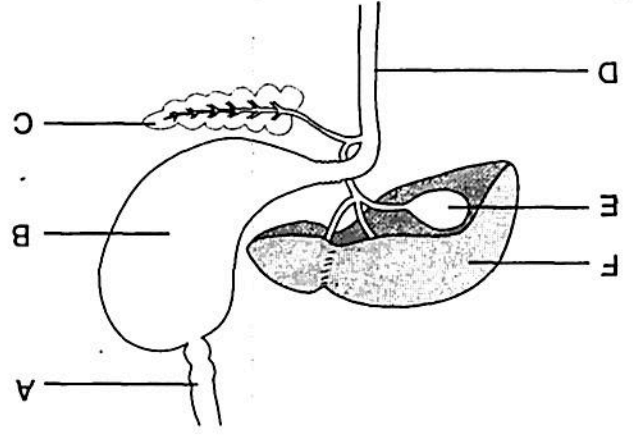
17. Base your answer to the following question on the diagram and graph below and on your knowledge of biology. The diagram represents the human digestive system. Pepsin and trypsin are human digestive enzymes.



The graph indicates that pepsin would function best in the

- 1) stomach
- 2) mouth
- 3) large intestine
- 4) small intestine

Base your answers to questions 18 and 19 on the diagram below.



18. Peristalsis occurs in structures

- 1) A and D
- 2) B and C
- 3) C and E
- 4) E and F

21. What occurs during the digestion of proteins?

- 1) Specific enzymes break down proteins into simple sugars.
- 2) Specific hormones break down proteins into complex starches.
- 3) Specific enzymes break down proteins into amino acids.
- 4) Specific hormones break down proteins into simple sugars.

20. Which type of digestion occurs in the mouth when an individual chews a piece of bread?

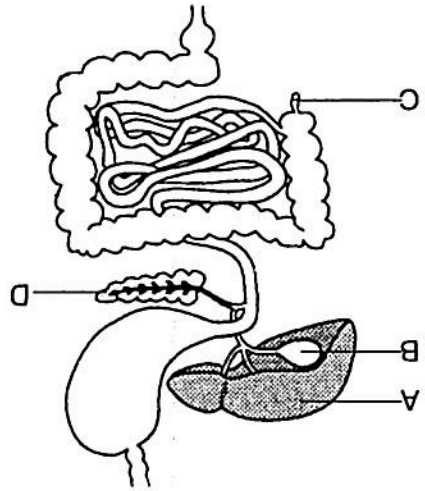
- 1) neither mechanical nor chemical digestion
- 2) mechanical digestion, only
- 3) both mechanical and chemical digestion
- 4) chemical digestion, only

19. A digestive function of organ C is the synthesis and secretion of

- 1) bile
- 2) hydrochloric acid
- 3) protease
- 4) salivary amylase

Nutrition Exam

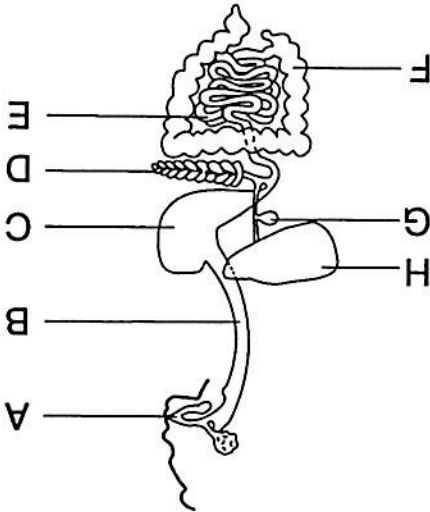
22. Choking on food is most likely caused by an interference with the proper functioning of the
- 1) nasal cavity
 - 2) epiglottis
 - 3) diaphragm
 - 4) bronchial tubes
23. Which lettered structure in the diagram below produces enzymes for the digestion of nutrients in the small intestine?



- 1) A
- 2) B
- 3) C
- 4) D

Nutrition Exam

Base your answers to questions 24 through 26 on the diagram below of the human digestive system and on your knowledge of biology.



24. In which structure does extracellular chemical digestion of protein begin?
- 1) C
 - 2) B
 - 3) C
 - 4) E
25. From which structure are glucose and amino acids normally absorbed into the circulatory system?
- 1) F
 - 2) H
 - 3) C
 - 4) E
26. In which structure does the initial hydrolysis of carbohydrates occur?
- 1) A
 - 2) E
 - 3) C
 - 4) D
27. In humans, villi that absorb monosaccharides and amino acids are found within the
- 1) stomach
 - 2) pancreas
 - 3) small intestine
 - 4) esophagus

Nutrition Exam

31. Which process is represented by the diagram below?



- 1) excretion
- 2) peristalsis
- 3) emulsification
- 4) absorption

32. A source of roughage in the human diet is supplied by certain

- 1) complex carbohydrates
- 2) saturated lipids
- 3) complete proteins
- 4) nucleic acids

33. A disorder of the digestive system that can cause severe dehydration is known as

- 1) gallstones
- 2) constipation
- 3) diarrhea
- 4) appendicitis

34. Feces is usually about 40 percent water and 60 percent solid matter. Reducing the water content to 20 percent would most likely result in

- 1) ulcers
- 2) constipation
- 3) diarrhea
- 4) appendicitis

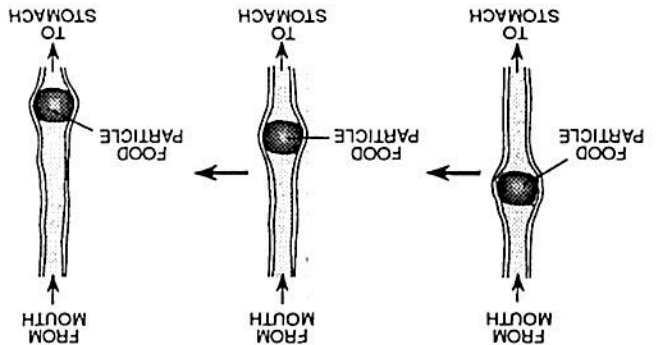
35. A branch of the nerve regulating the secretions of the stomach can be cut surgically. The decrease in hydrochloric acid secretion that would result from this procedure would be most helpful to an individual with

- 1) diarrhea
- 2) gallstones
- 3) appendicitis
- 4) ulcers

36. Hardened deposits of cholesterol that accumulate in the structure that stores bile are known as

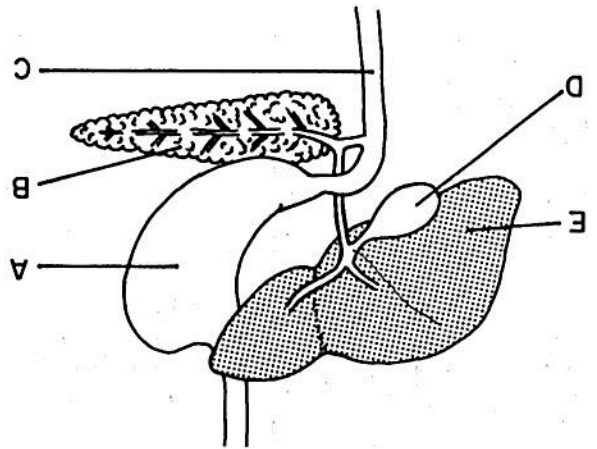
- 1) allergies
- 2) ulcers
- 3) goiters
- 4) gallstones

28. Which process is illustrated in the diagrams below?



- 1) peristalsis
- 2) circulation
- 3) absorption
- 4) ingestion

29. Base your answer to the following question on the diagram below of some human digestive organs and on your knowledge of biology.



Which organ synthesizes both urea and bile?

- 1) A
- 2) E
- 3) C
- 4) D

30. Which structure produces a substance that aids in the mechanical breakdown of fats?

- 1) thyroid gland
- 2) testes
- 3) liver
- 4) pituitary gland

Nutrition Exam

37. Base your answer to the following question on the passage below and on your knowledge of biology.

When humans perspire, water, urea, and salts containing sodium are removed from the blood. Drinking water during extended periods of physical exercise replenishes the water but not the sodium. This increase in water dilutes the blood and may result in the concentration of sodium dropping low enough to cause a condition known as hyponatremia.

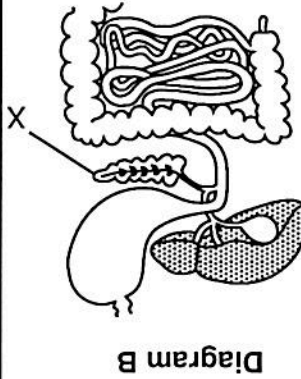
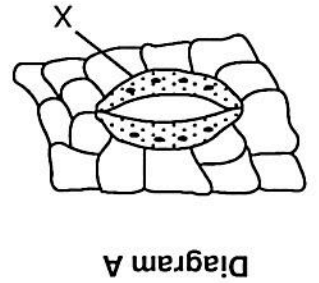
Symptoms of hyponatremia include headache, nausea, and lack of coordination. Left untreated, it can lead to coma and even death. The body has a variety of feedback mechanisms that assist in regulating water and sodium concentrations in the blood. The kidneys play a major role in these mechanisms, as they filter the blood and produce urine.

The best way to reduce the symptoms of hyponatremia would be to

- 1) drink more water
- 2) eat salty foods
- 3) eat chocolate
- 4) drink cranberry juice

38. State *one* reason that most foods must be digested before they can enter a cell.

39. Diagram A below represents a microscopic view of the lower surface of a leaf. Diagram B represents a portion of the human body.



- a Choose *one* diagram and record its letter, A or B, in the space provided.
- b Identify the structure labeled X in the diagram you chose.
- c State *one* problem for the organism that would result from a malfunction of the structure you identified.

- Body Systems
- Digestive
- Circulatory
- Respiratory
- Excretory
- Nervous

Describe a malfunction that can occur in the system chosen. Your answer must include at least:

- the name of the system and a malfunction that can occur in this system
- a description of a possible cause of the malfunction identified
- an effect this malfunction may have on any other body system

40. Select *one* human body system from the list below.

1.	3	
2.	3	
3.	3	
4.	2	
5.	2	
6.	3	
7.	3	
8.	2	
9.	3	
10.	2	
11.	2	
12.	4	
13.	4	
14.	3	
15.	3	
16.	3	
17.	1	
18.	1	
19.	3	
20.	3	
21.	3	
22.	2	
23.	4	
24.	3	
25.	4	
26.	1	
27.	3	
28.	1	
29.	2	
30.	3	cause - Parkinson's disease - brain stops making a sufficient supply of critical chemical (dopamine)
31.	3	
32.	1	
33.	2	
34.	3	
35.	4	
36.	4	
37.	2	
38.	3	
39.	3	
40.	2	