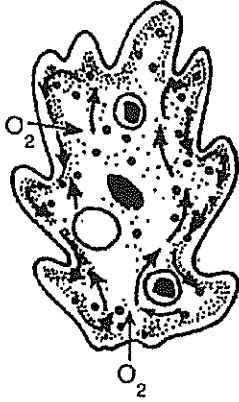


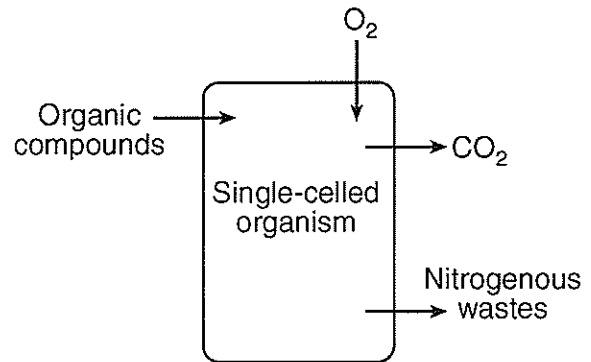
TAKE HOME REVIEW TEST

1. Which life process is indicated by the arrows in the diagram of a paramecium shown below?



- 1) digestion 3) ingestion
2) excretion 4) transport
2. Nutrition involves those activities by which organisms
- 1) remove cellular waste products
 - 2) obtain and process materials needed for other activities
 - 3) exchange gases with their environment
 - 4) absorb and circulate materials
3. ATP is a compound that is synthesized when
- 1) chemical bonds between carbon atoms are formed during photosynthesis
 - 2) energy stored in chemical bonds is released during cellular respiration
 - 3) energy stored in nitrogen is released, forming amino acids
 - 4) digestive enzymes break amino acids into smaller parts
4. When do green plants carry on cellular respiration?
- 1) only during the night
 - 2) only during the day
 - 3) during both the night and the day
 - 4) neither during the night nor during the day
5. Which group contains only molecules that are each assembled from smaller organic compounds?
- 1) proteins, water, DNA, fats
 - 2) proteins, starch, carbon dioxide, water
 - 3) proteins, DNA, fats, starch
 - 4) proteins, carbon dioxide, DNA, starch

6. 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
- 1) active transport
 - 2) genetic recombination
 - 3) homeostasis
 - 4) digestion
7. The arrows in the diagram below indicate the movement of materials into and out of a single-celled organism.



The movements indicated by all the arrows are directly involved in

- 1) the maintenance of homeostasis
 - 2) photosynthesis, only
 - 3) excretion, only
 - 4) the digestion of minerals
8. As a result of their metabolic activities, many organisms produce harmful substances. These substances are eliminated by the process of
- 1) ingestion 3) pinocytosis
 - 2) secretion 4) excretion
9. Which organism is considered an exception to the cell theory because it has a noncellular structure?
- 1) tree 3) virus
 - 2) bacterium 4) fish
10. In which organelles is ATP produced?
- 1) cell walls 3) mitochondria
 - 2) centrioles 4) chloroplasts

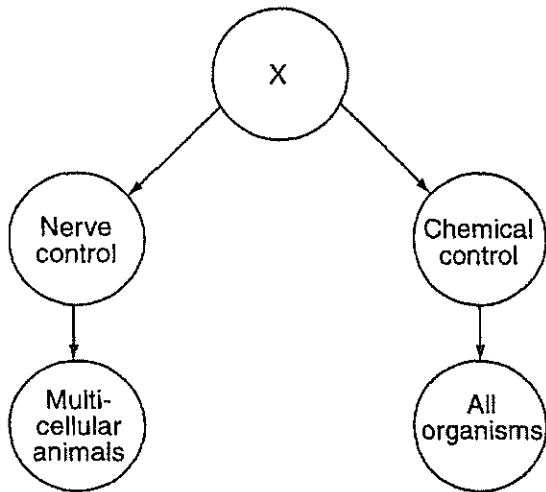
11. Arrows *A*, *B*, and *C* in the diagram below represent the processes necessary to make the energy stored in food available for muscle activity.



The correct sequence of processes represented by *A*, *B*, and *C* is

- | | |
|---|---|
| 1) diffusion \rightarrow synthesis \rightarrow active transport | 3) digestion \rightarrow excretion \rightarrow cellular respiration |
| 2) digestion \rightarrow diffusion \rightarrow cellular respiration | 4) synthesis \rightarrow active transport \rightarrow excretion |

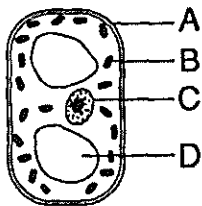
12. A graphic organizer is represented in the diagram below.



The letter *X* most likely represents the term

- | | |
|---------------|------------------|
| 1) regulation | 3) growth |
| 2) excretion | 4) transpiration |

13. The diagram below represents a plant cell.



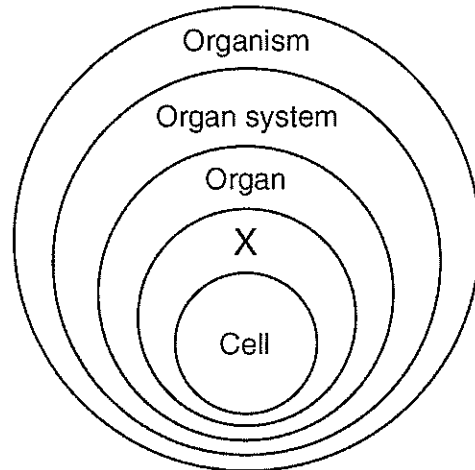
Which cell structure is made of cellulose?

- | | |
|-------------|-------------|
| 1) <i>A</i> | 3) <i>C</i> |
| 2) <i>B</i> | 4) <i>D</i> |

14. Most organisms contain

- 1) organic compounds, only
- 2) inorganic compounds, only
- 3) both organic and inorganic compounds
- 4) neither organic nor inorganic compounds

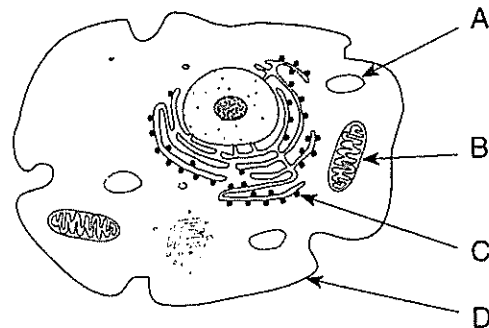
15. The diagram below represents levels of organization in living things.



Which term would best represent *X*?

- | | |
|-----------|--------------|
| 1) human | 3) stomach |
| 2) tissue | 4) organelle |

16. Which letter in the diagram below indicates the structure that is most closely associated with excretion?

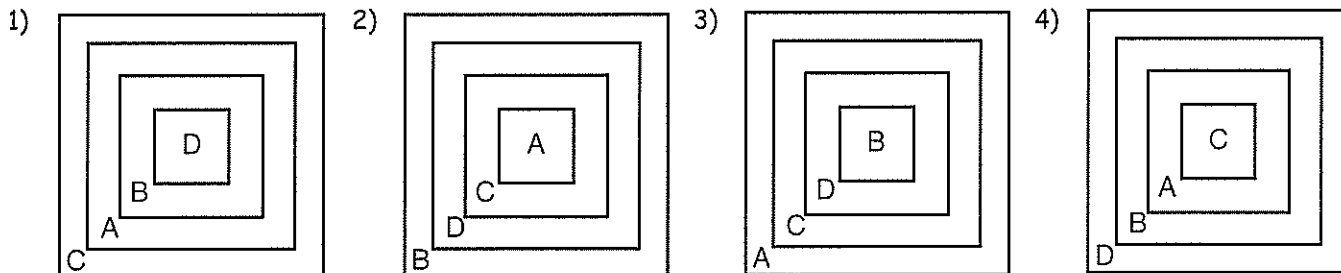


- | | |
|-------------|-------------|
| 1) <i>A</i> | 3) <i>C</i> |
| 2) <i>B</i> | 4) <i>D</i> |

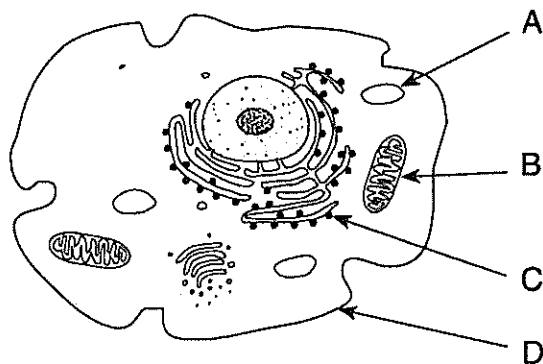
17. Which diagram represents the relative sizes of the structures listed below?

Structures

A	gene
B	cell
C	chromosome
D	nucleus



18. Base your answer to the following question on Which letter in the diagram below indicates an organelle that functions primarily in the synthesis of long chains of amino acids?



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

19. A human liver cell and a human skin cell in the same person have the same genetic sequences. However, these cells are different because the liver cell

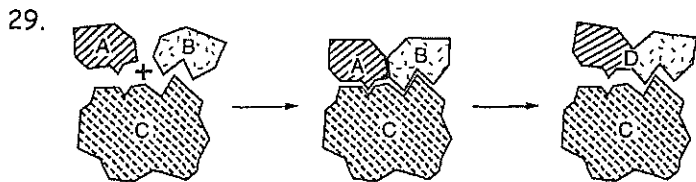
- 1) has more dominant traits than the skin cell
- 2) can reproduce but the skin cell cannot
- 3) carries out respiration but the skin cell does not
- 4) uses different genes than the skin cell

20. The table below provides some information concerning organelles and organs.

Function	Organelle	Organ
gas exchange	cell membrane	lung
nutrition	food vacuole	stomach

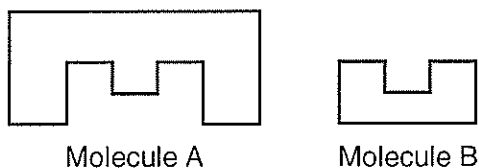
Based on this information, which statement accurately compares organelles to organs?

- 1) Functions are carried out more efficiently by organs than by organelles.
 - 2) Organs maintain homeostasis while organelles do not.
 - 3) Organelles carry out functions similar to those of organs.
 - 4) Organelles function in multicellular organisms while organs function in single-celled organisms
21. Which substance plays a major role in most of the chemical reactions that occur in a living cell?
- 1) water
 - 2) glycogen
 - 3) glycerol
 - 4) maltose
22. Which human excretory organ synthesizes urea?
- 1) lung
 - 2) kidney
 - 3) skin
 - 4) liver



This diagram shows the relationship between

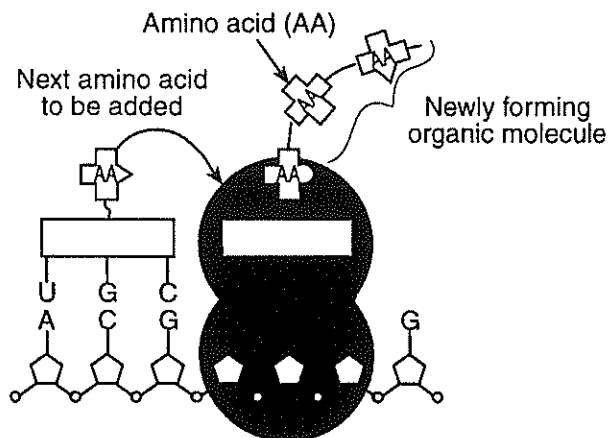
- 1) enzymes and synthesis
 - 2) glucose and ribosomes
 - 3) monosaccharides
 - 4) polypeptides
30. Enzyme molecules normally interact with substrate molecules. Some medicines work by blocking enzyme activity in pathogens. These medicines are effective because they
- 1) are the same size as the enzyme
 - 2) are the same size as the substrate molecules
 - 3) have a shape that fits into the enzyme
 - 4) have a shape that fits into all cell receptors
31. The diagram below represents two molecules that can interact with each other to cause a biochemical process to occur in a cell.



Molecules *A* and *B* most likely represent

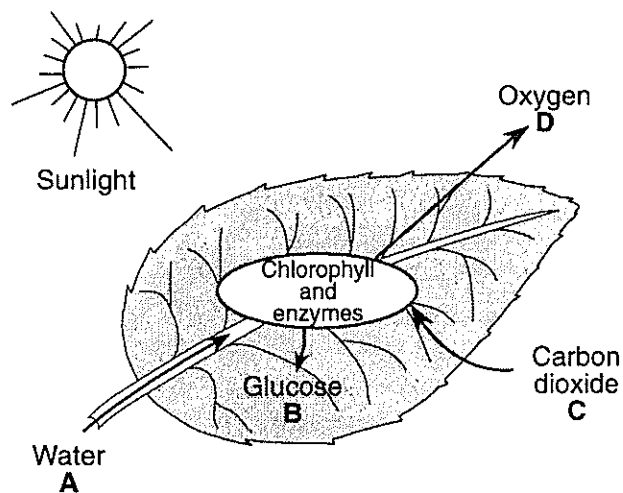
- 1) a protein and a chromosome
 - 2) a receptor and a hormone
 - 3) a carbohydrate and an amino acid
 - 4) an antibody and a hormone
32. The ability of an organism to obtain food, seek shelter, and avoid predators is most directly related to the function of
- 1) reproduction
 - 2) egestion
 - 3) locomotion
 - 4) excretion
33. In the knee, the ends of the leg bones are held together primarily by
- 1) ligaments
 - 2) smooth muscle
 - 3) tendons
 - 4) cardiac muscle

34. The diagram below represents a process that occurs within a cell in the human pancreas.



This process is known as

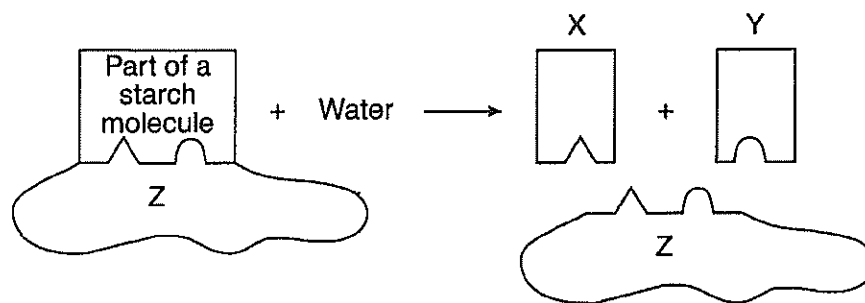
- 1) digestion by enzymes
 - 2) protein synthesis
 - 3) energy production
 - 4) replication of DNA
35. Most green plants are able to take carbon dioxide from the environment and use it to make glucose. This activity is an example of
- 1) hydrolysis
 - 2) saprophytism
 - 3) cellular respiration
 - 4) autotrophic nutrition
36. the diagram below and on your knowledge of biology. The diagram represents some processes occurring in the leaf of a plant.



Which equation illustrates a process of nutrition carried out within the leaf?

- 1) $B + D \rightarrow A + C$
- 2) $A + C \rightarrow B + D$
- 3) $B + C \rightarrow A + D$
- 4) $A + B + D \rightarrow B + C$

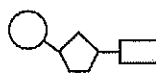
37. Base your answer to the following question on the diagram below, which represents a chemical reaction that occurs in the human body, and on your knowledge of biology.



Substances X and Y are examples of which kind of molecule?

- 1) simple sugar 2) amino acid 3) fat 4) hormone

38. on the chart below and your knowledge of Biology

Class of Substance	Basic Unit of Structure	One Possible Function	Examples
A	$ \begin{array}{c} \text{H} \quad \text{H} \\ \quad \\ \text{H}-\text{N}-\text{C}-\text{C} \\ \quad \quad \\ \text{R} \quad \text{O} \quad \text{OH} \end{array} $	B	C
Carbohydrate	D	Structural component of cell walls	E
F	G	Structural component of cell membranes	Fats, waxes
H		Protein synthesis	I

Which belongs in section G?

- 1) amino acids 2) fatty acids 3) glucose 4) water

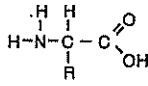
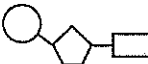
39. The flow of blood to and from the lungs is referred to as

- 1) pulmonary circulation 3) autonomic circulation
2) systemic circulation 4) somatic circulation

40. Which of the following substances is secreted by the immune system, stimulating dilation of blood vessels and swelling?

- 1) glucose 3) histamine
2) insulin 4) red blood cells

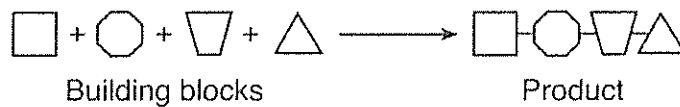
41. on the chart below and your knowledge of Biology

Class of Substance	Basic Unit of Structure	One Possible Function	Examples
A		B	C
Carbohydrate	D	Structural component of cell walls	E
F	G	Structural component of cell membranes	Fats, waxes
H		Protein synthesis	I

In which section of the chart do Proteins belong?

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

42. The diagram below represents the synthesis of a portion of a complex molecule in an organism.

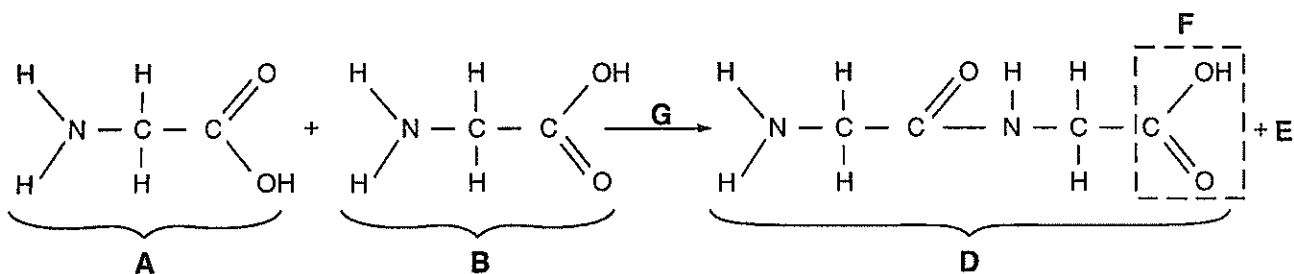


Which row in the chart could be used to identify the building blocks and product in the diagram?

Row	Building Blocks	Product
(1)	starch molecules	glucose
(2)	amino acid molecules	part of protein
(3)	sugar molecules	ATP
(4)	DNA molecules	part of starch

- 1) 1 2) 2 3) 3 4) 4

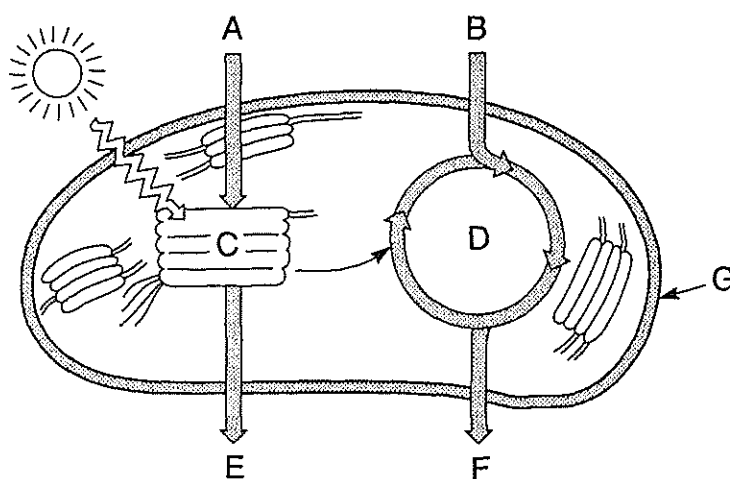
43. Base your answer to the following question on the chemical reaction represented below.



This reaction is an example of

- | | |
|------------------------|--------------------------|
| 1) hydrolysis | 3) dehydration synthesis |
| 2) aerobic respiration | 4) deamination |

Base your answers to questions 44 and 45 on the diagram of a chloroplast below.



44. Letter E represents

- | | | | |
|-----------|-----------|----------|-------------------|
| 1) oxygen | 2) carbon | 3) water | 4) carbon dioxide |
|-----------|-----------|----------|-------------------|

45. The light dependent reaction occurs at letter

- | | | | |
|------|------|------|------|
| 1) A | 2) F | 3) C | 4) D |
|------|------|------|------|

46. A function of the human lymphatic system is to

- 1) transport oxygen and carbon dioxide
- 2) help maintain fluid balance in blood and between cells
- 3) filter urea out of the blood
- 4) initiate clotting and scabbing

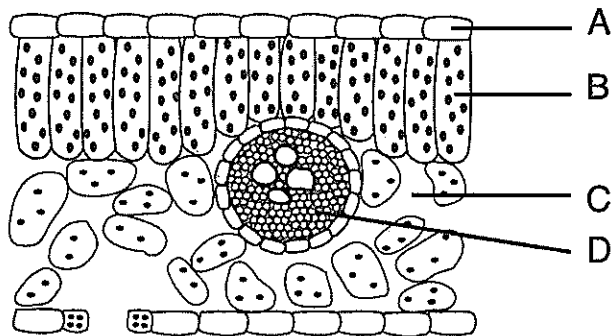
47. A substance which causes an immunological reaction when introduced into the body of a human is

- | | |
|------------|----------------|
| 1) glucose | 3) an antibody |
| 2) insulin | 4) an antigen |

48. Which sequence correctly indicates the branching pattern of the human respiratory system?

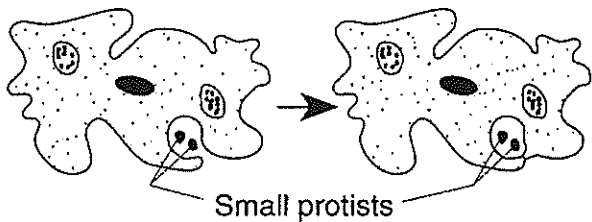
- 1) trachea → bronchi → bronchioles → alveoli
- 2) trachea → bronchioles → bronchi → alveoli
- 3) alveoli → trachea → bronchioles → bronchi
- 4) alveoli → bronchioles → trachea → bronchi

49. The diagram below represents a cross section of a plant structure.



Which letter indicates the region where most photosynthesis takes place?

- 1) A 3) C
2) B 4) D
50. Which activity is illustrated by the amoeba shown below?

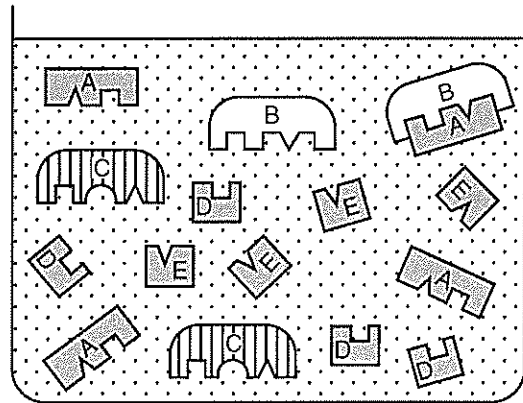


- 1) intracellular digestion egestion
2) ingestion and synthesis
3) respiration and intracellular digestion
4) ingestion and intracellular digestion
51. Base your answer to the following question on All organisms obtain, convert and transport materials through their bodies. These processes depend on the amount of

One way human skeletal muscles react when exercising and lack oxygen is to

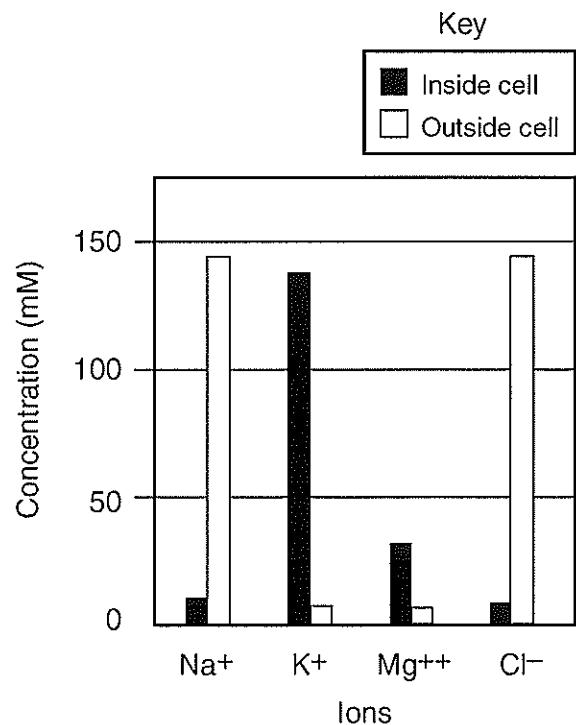
- 1) reproduce asexually, using binary fission and regeneration
2) lack a nuclear membrane surrounding the chromosomes
3) carry out autotrophic nutrition when food becomes scarce in the environment
4) produce lactic acid when oxygen is not available for respiration

52. The diagram below represents a beaker containing a solution of various molecules involved in digestion.



Which structures represent products of digestion?

- 1) A and D 3) B and E
2) B and C 4) D and E
53. The graph below shows the relative concentrations of different ions inside and outside of an animal cell.

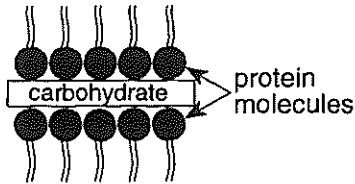


Which process is directly responsible for the net movement of K⁺ and Mg⁺⁺ into the animal cell?

- 1) photography 3) active transport
2) diffusion 4) circulation

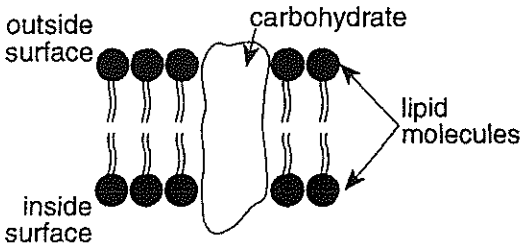
54. Which diagram best represents the fluid-mosaic model of a cell membrane?

1) outside surface



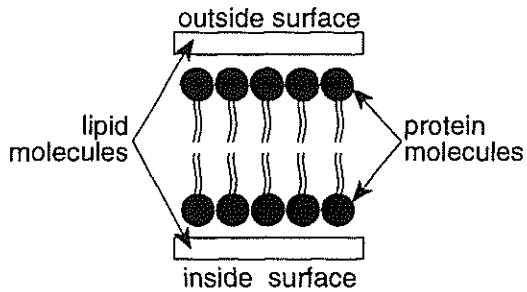
inside surface

2) outside surface



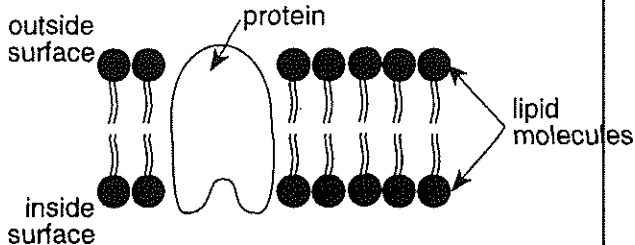
inside surface

3)



inside surface

4) outside surface

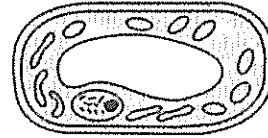


inside surface

55. Which sequence represents the correct pathway for the removal of urine from the human body?

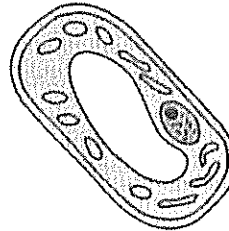
- 1) kidney → ureter → urinary bladder → urethra
- 2) kidney → urethra → urinary bladder → ureter
- 3) ureter → kidney → urinary bladder → urethra
- 4) urethra → kidney → urinary bladder → ureter

56. The diagram below represents a plant cell in tap water as seen with a compound light microscope.

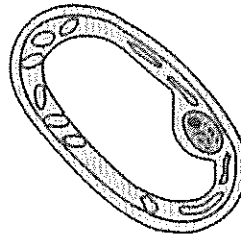


Which diagram best represents the appearance of the cell after it has been placed in a 15% salt solution for two minutes?

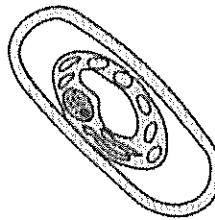
1)



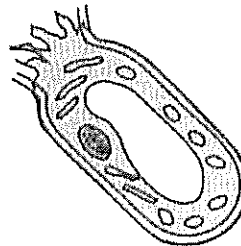
2)



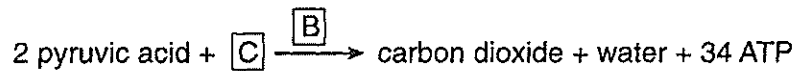
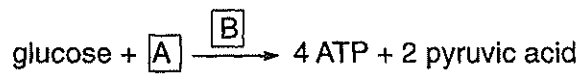
3)



4)



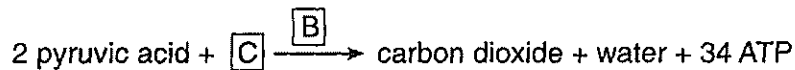
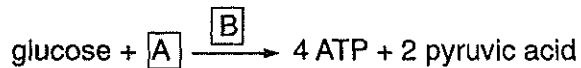
57. the biochemical reactions below and on your knowledge of biology.



Letter *A* represents

- 1) hydrogen 2) 2 DNA 3) carbon dioxide 4) 2 ATP

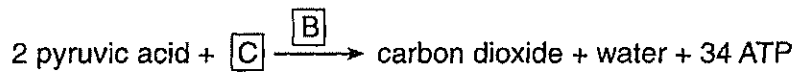
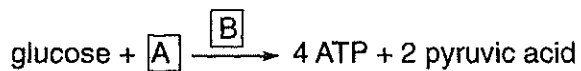
58. the biochemical reactions below and on your knowledge of biology.



Letter *B* represents

- 1) 4 ADP 2) enzymes 3) 2 PGAL 4) starch

59. Base your answer to the following question on the biochemical reactions below and on your knowledge of biology.



Letter *C* represents

- 1) oxygen 2) $2\text{C}_6\text{H}_{12}\text{O}_6$ 3) 4 ADP 4) alcohol

60. In a simple spinal reflex, the pathway for an impulse is along a sensory neuron directly to a motor neuron through

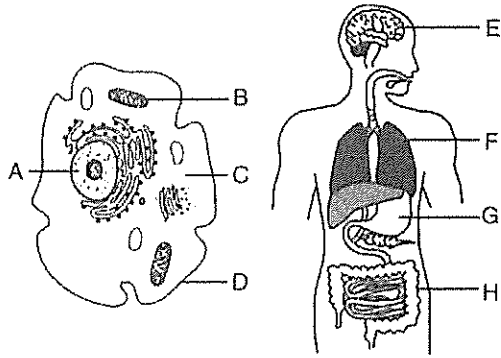
- 1) an effector 3) an interneuron
2) a receptor 4) the brain

61. Base your answer to the following question on

Which is a correct route of an impulse in a reflex arc?

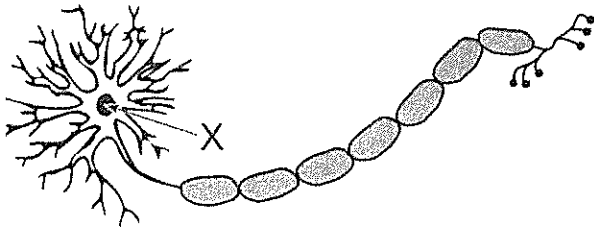
- 1) receptor → sensory neuron → interneuron → motor neuron → effector
2) effector → receptor → motor neuron → sensory neuron → interneuron
3) sensory neuron → effector → motor neuron → receptor → interneuron
4) motor neuron → sensory neuron → interneuron → effector

62. A single cell and a multicellular organism are represented below.



Which structures are correctly paired with their primary function?

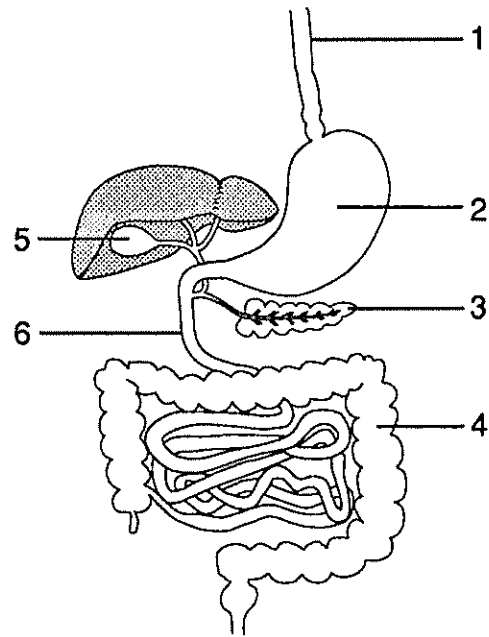
- 1) A and G—transmission of nerve impulses
 - 2) B and E—photosynthesis
 - 3) C and H—digestion of food
 - 4) D and F—gas exchange
63. Base your answer to the following question on the diagram below of a cell associated with coordination and on your knowledge of biology.



Which statement best describes a function of the entire structure shown in the diagram?

- 1) It unites with an egg cell during fertilization.
 - 2) It synthesizes a hormone involved in the control of blood sugar level.
 - 3) It releases chemicals involved in cellular communication.
 - 4) It controls the replication of genetic material.
64. Each body cell of a certain organism contains 26 chromosomes. How many chromosomes would normally be present in a gamete produced by this organism?
- 1) 2
 - 2) 13
 - 3) 26
 - 4) 52

Base your answers to questions 65 and 66 on the diagram below. For *each* statement select the organ, that is most closely associated with the statement below. [A number may be used more than once or not at all.]



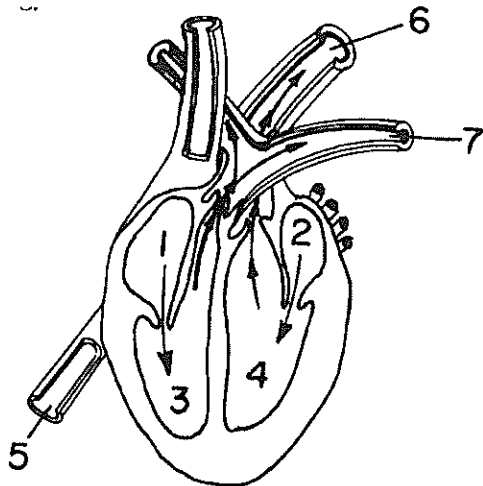
65. HCL is produced in this organ.
- 1) 5
 - 2) 2
 - 3) 3
 - 4) 4
66. Water reabsorption and materials to be egested are stored in this organ.
- 1) 5
 - 2) 2
 - 3) 3
 - 4) 4

67. Base your answer to the following question on

An increase in the level of insulin in the blood would most directly result in

- 1) a decrease in the amount of glucose in the blood
- 2) a decrease in the amount of protein in the blood
- 3) an increase in the amount of fat in cells
- 4) an increase in the amount of carbon dioxide in cells

Base your answers to questions 68 through 70 on the diagram of the adult human heart and on your knowledge of biology.



68. Which number indicates the structure which takes blood to the lungs

- 1) 1
- 2) 5
- 3) 6
- 4) 7

69. Which number indicates the right atrium?

- 1) 1
- 2) 2
- 3) 3
- 4) 4

70. The last heart chamber the blood leaves before it goes to the body is number

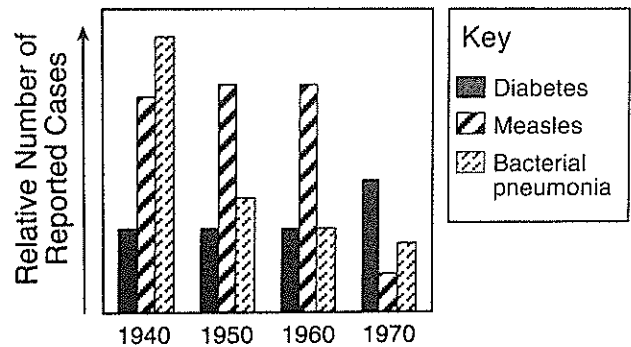
- 1) 1
- 2) 2
- 3) 3
- 4) 4

71. Which statement best explains why invertebrates regenerate lost tissue more readily than most vertebrates do?

- 1) Invertebrates contain specialized cells that produce the hormones necessary for this process.
- 2) Invertebrate cells exhibit a higher degree of uncontrolled cell division than vertebrate cells do.
- 3) Invertebrate animals reproduce asexually, but vertebrate animals reproduce sexually.
- 4) Invertebrate animals have more undifferentiated cells than vertebrate animals have.

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

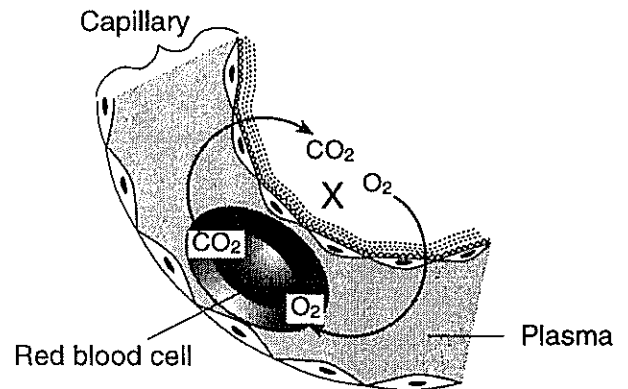
Incidence of Three Human Diseases in Four Different Years



Which statement best explains a change in the incidence of disease in 1970?

- 1) Children were vaccinated against measles.
- 2) New drugs cured diabetes.
- 3) The bacteria that cause pneumonia developed a resistance to drugs.
- 4) New technology helped to reduce the incidence of all three diseases.

73. The diagram below represents part of a capillary in a specific region of the human body.

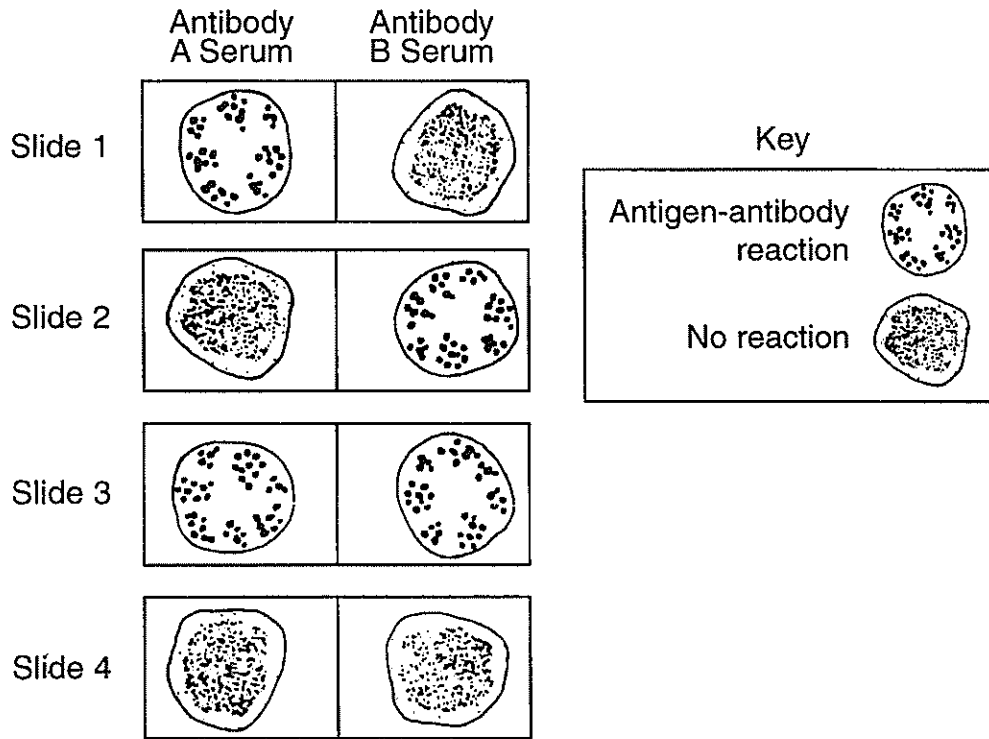


The region labeled X represents part of

- 1) a muscle
- 2) an alveolus
- 3) an avillus
- 4) the liver

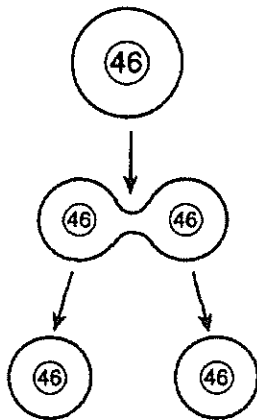
74. Base your answer to the following question on the information and diagram below.

A technician needed to determine the blood type of four individuals. To do this, the technician set up four slides, one for each individual. The technician placed a drop of antibody A serum and a drop of antibody B serum on each of four slides. The technician mixed a drop of blood from each individual into the anti-A and anti-B serum on a different slide. The results of the four tests are shown below.



Which slide contains blood from the individual who has antigen A, but not antigen B?

75. The diagram below can be used to illustrate a process directly involved in

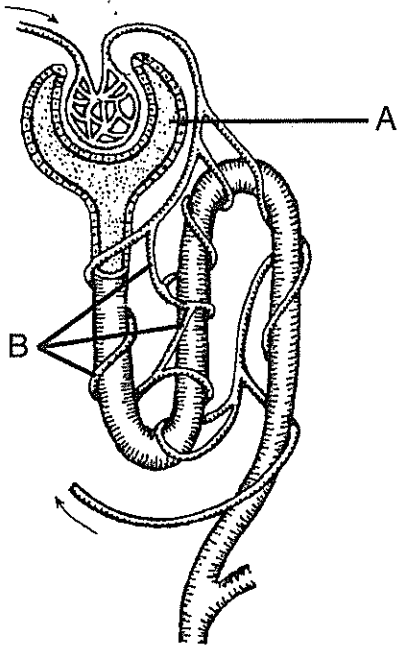


- | | |
|------------------|------------------------|
| 1) tissue repair | 3) protein synthesis |
| 2) transcription | 4) sexual reproduction |

76. Which sequence represents the correct order of processes that result in the formation and development of an embryo?

- 1) meiosis → fertilization → mitosis
- 2) mitosis → fertilization → meiosis
- 3) fertilization → meiosis → mitosis
- 4) fertilization → mitosis → meiosis

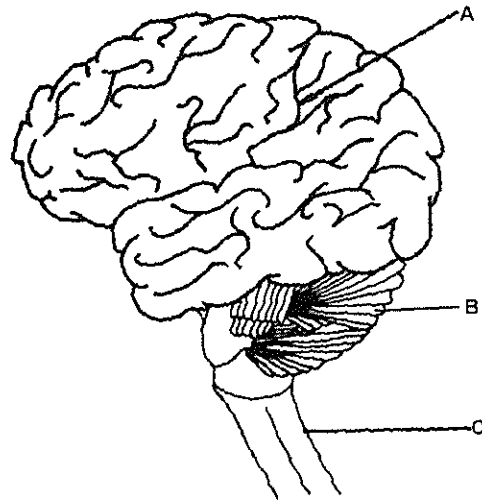
77. Base your answer to the following question on the diagram below and on your knowledge of biology.



Letter *B* indicates structures that function in the

- 1) filtration of plasma leaving the blood
- 2) transport of urine to the ureter
- 3) reabsorption of water, minerals, and digestive end products
- 4) transport of blood directly to the glomerulus of a kidney

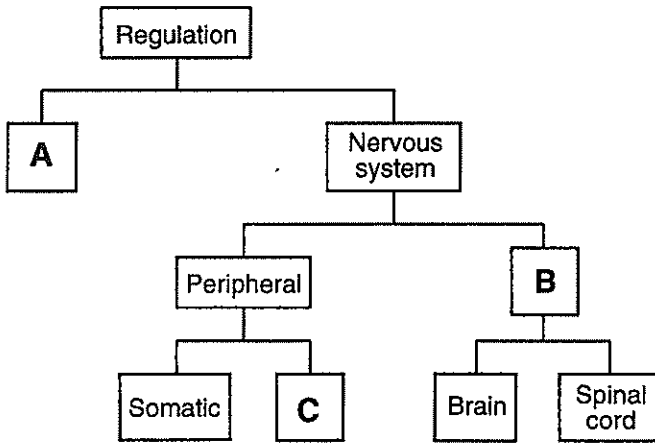
78. Base your answer to the following question on the diagram below which represents the human brain and on your knowledge of biology.



Which are the correct structure and function for the part indicated by letter *B*?

- 1) cerebrum → breathing
- 2) cerebellum → balance
- 3) medulla → problem solving
- 4) spinal cord → reflex actions

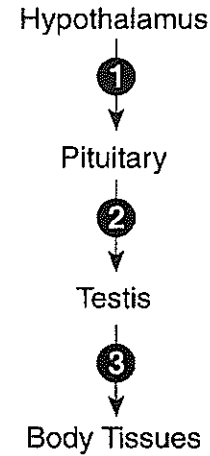
79. Base your answer to the following question on the diagram below, which represents the two systems involved in regulation, and on your knowledge of biology.



The box labeled C can be further subdivided into

- 1) the sympathetic and parasympathetic nervous systems.
- 2) the involuntary and voluntary nervous systems.
- 3) the chemical and electrical nervous systems.
- 4) the steroid and protein-based systems.

80. Base your answer to the following question on the diagram below and on your knowledge of biology. The arrows in the diagram indicate certain hormones in the human male body.



A high level of hormone 3 in the blood inhibits the production of hormone 2. This situation is an example of

- 1) nervous regulation
- 2) hydrolysis
- 3) dehydration synthesis
- 4) negative feedback