Name: _____ **Date:** _____

1. A student hypothesized that lettuce seeds would not germinate (begin to grow) unless they were covered with soil. The student planted 10 lettuce seeds under a layer of soil and scattered 10 lettuce seeds on top of the soil. The data collected are shown in the accompanying table.

Data Table

Seed Treatment	Number of Seeds Germinated
Planted under soil	9
Scattered on top of soil	8

To improve the reliability of these results, the student should

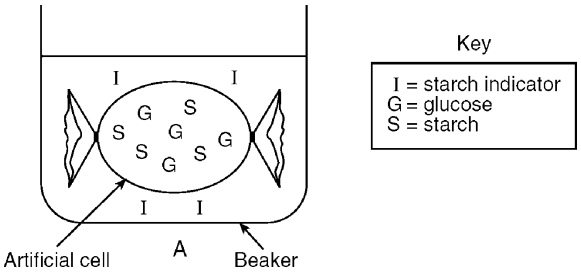
A. conclude that darkness is necessary for lettuce seed germination

B. conclude that light is necessary for lettuce seed germination

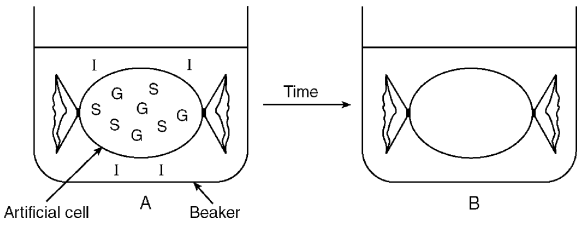
C. revise the hypothesis

D. repeat the experiment using a larger sample size

2. Base your answer(s) to the following question(s) on the information and diagram below and on your knowledge of biology. The diagram illustrates an investigation carried out in a laboratory activity on diffusion. The beaker and the artificial cell also contain water.

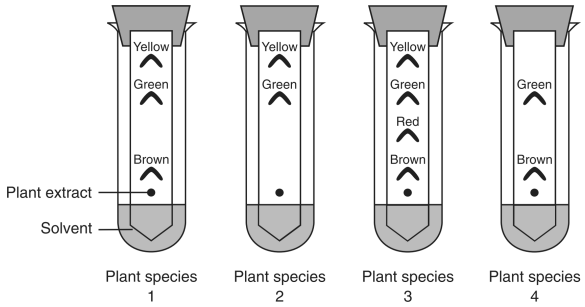


Predict what would happen over time by showing the location of molecules *I*, *G*, and *S* in diagram *B* below.



3. State what is observed when there is a positive test for starch using the starch indicator.

4. Base your answer to the following question on the results of an experiment using plant pigments represented below and on your knowledge of biology.



Which phrase could be used to describe this technique?

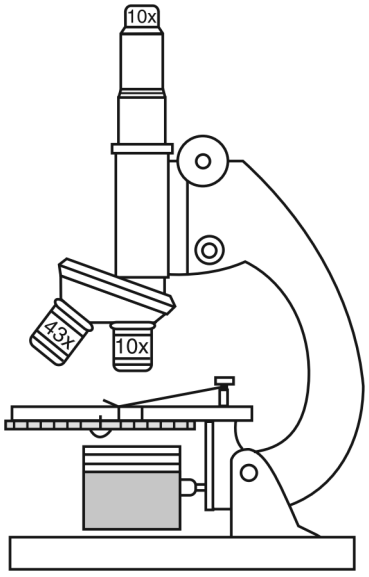
A. the use of chromatography to separate molecules in a mixture

B. the use of cut leaves to observe certain colors

C. using indicators to determine pH

D. using dichotomous keys to identify plants

5. Base your answer(s) to the following question(s) on the diagram of a compound light microscope below and on your knowledge of biology.



What is the total magnification of this microscope using the high-power objective lens?

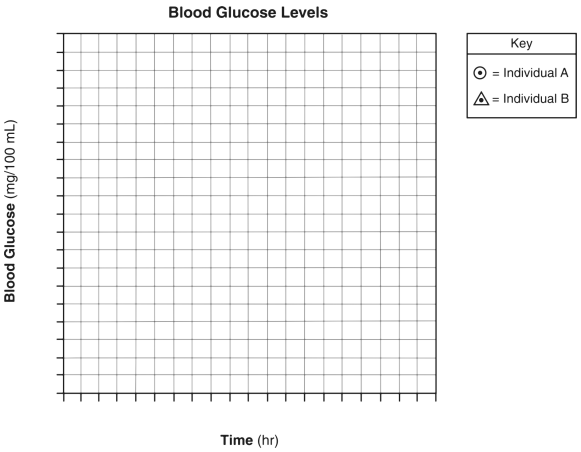
A. 43x B. 53x C. 100x D. 430x

6. Base your answers to the following question(s) on the information and data table below and on your knowledge of biology.

Diabetes is a disease characterized by consistently high blood glucose levels (at or above 126 mg/100 mL) as a result of hormone deficiency. For a study of diabetes, blood glucose levels from individual A and individual B were recorded each hour over a 5-hour period following a meal. The results are shown in the data table below. Blood Glucose Levels (mg/100 mL).

Blood Glucose Levels
(mg/100 mL)

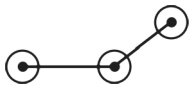
Hours	Individual A	Individual B
0	135	90
1	175	122
2	200	110
3	185	87
4	165	85
5	150	90



Directions: Using the information in the data table, construct a line graph on the grid on the next page, following the directions below.

Plot the data for individual A on the grid, surround each point with a small circle, and connect the points.

Example:



7. Plot the data for individual B on the grid, surround each point with a small triangle, and connect the points.

Example:

8. Mark an appropriate scale, without any breaks, on each labeled axis.

9. Which structure is best observed using a compound light microscope?

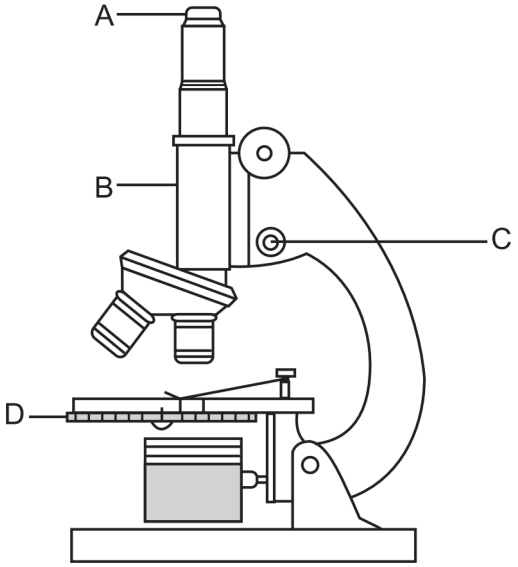
A. a cell

B. a virus

C. a DNA sequence

D. the inner surface of a mitochondrion

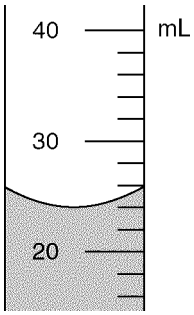
10. The diagram below represents a compound light microscope. Several parts have been labeled.



In order to make an image brighter, which labeled part of the microscope would most likely be adjusted?

A. *A* B. *B* C. *C* D. *D*

11. The diagram below shows a portion of a graduated cylinder.

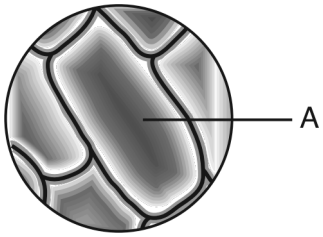


What is the volume of the liquid in this cylinder?

A. 22 mL B. 24 mL C. 25 mL D. 26 mL

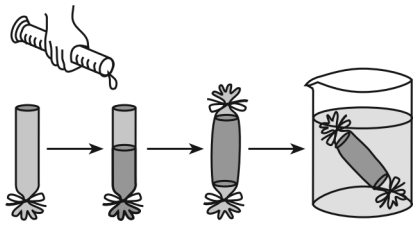
12. Base your answer(s) to the following question(s) on the information and diagram below and on your knowledge of biology.

A wet mount of red onion cells as seen with a compound light microscope is shown below.

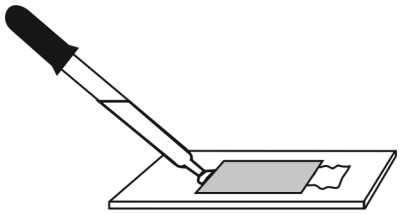


Which diagram best illustrates the technique that would most likely be used to add salt to these cells?

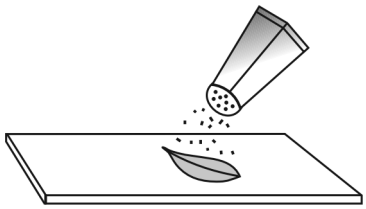
A.



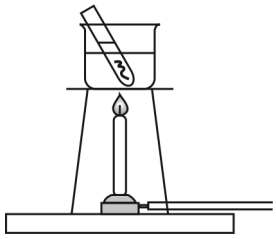
B.



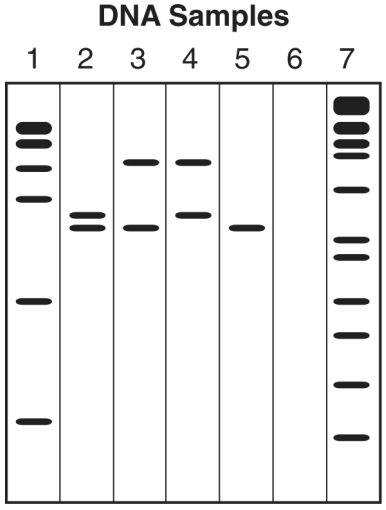
C.



D.



13. Base your answer(s) to the following question(s) on the diagram below and on your knowledge of biology. The diagram shows the results of a technique used to analyze DNA.

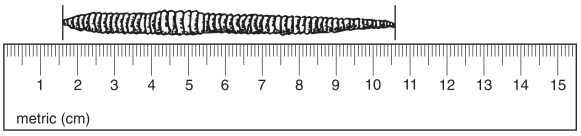


This laboratory technique is known as

A. gel electrophoresis B. DNA replication

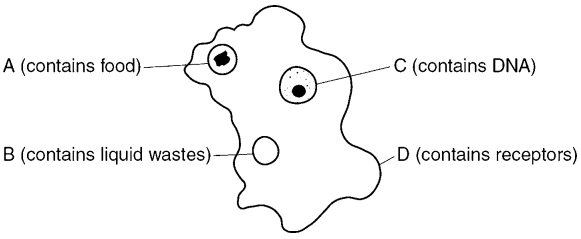
C. protein synthesis D. genetic recombination

14. What is the approximate length of the earthworm shown in the diagram below?



A. 9 mm B. 90 mm C. 10.6 cm D. 106 cm

15. Base your answer(s) to the following question(s) on the diagram, which shows some of the specialized organelles in a single-celled organism, and on your knowledge of biology.



Write the letter of one of the labeled organelles and state the name of that organelle.

16. Explain how the function of the organelle you selected in question 36 assists in the maintenance of homeostasis.

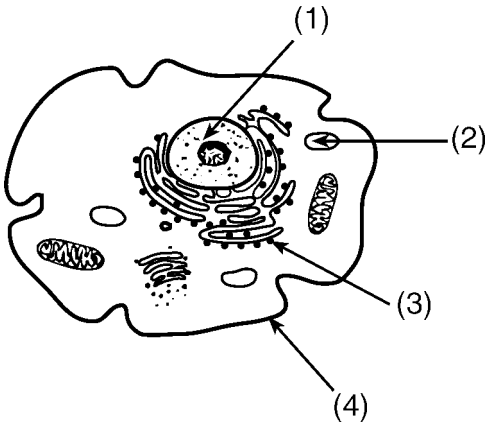
17. Identify a system in the human body that performs a function similar to that of the organelle you selected in question 36.

18. In a cell, all organelles work together to carry out

A. diffusion B. active transport

C. information storage D. metabolic processes

19. In the diagram below, which structure performs a function similar to a function of the human lungs?



A. 1 B. 2 C. 3 D. 4

20. Which organelle is correctly paired with its specific function?

A. cell membrane—storage of hereditary information

B. chloroplast—transport of materials

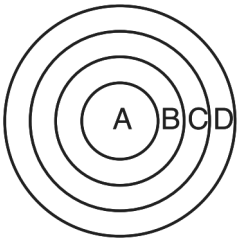
C. ribosome—synthesis of proteins

D. vacuole—production of ATP

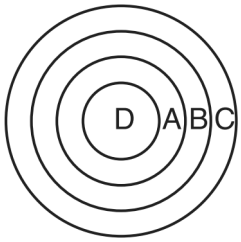
21. Which diagram best represents the relative locations of the structures in the list below?

A–chromosome
B–nucleus
C–cell
D–gene

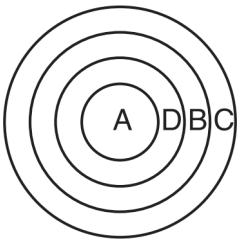
A.



B.



C.



D.

22. What is the main function of a vacuole in a cell?

A. storage B. coordination

C. synthesis of molecules D. release of energy

23. Which substance is an inorganic molecule?

A. starch B. DNA C. water D. fat

24. In a DNA sample, 15% of the bases are thymine (T). What percentage of the bases in this sample are adenine (A)?

A. 15% B. 30% C. 35% D. 85%

25. A substance is most likely to diffuse into a cell when

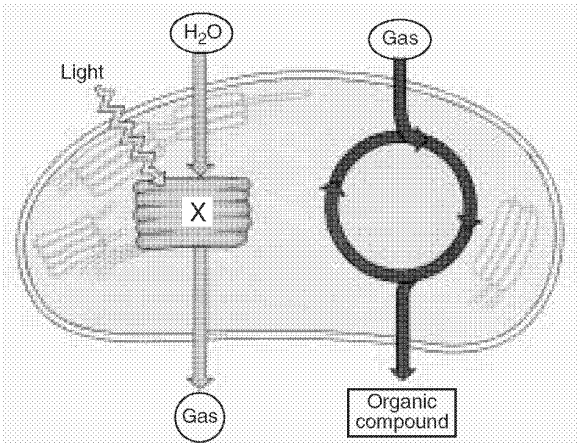
A. it is a large organic food molecule such as protein or starch

B. it is enclosed in an organelle such as a vacuole

C. the concentration of the substance is greater outside the cell than inside

D. the pH of the substance is greater than the pH of the cell

26. The accompanying diagram represents part of a life process in a leaf chloroplast.



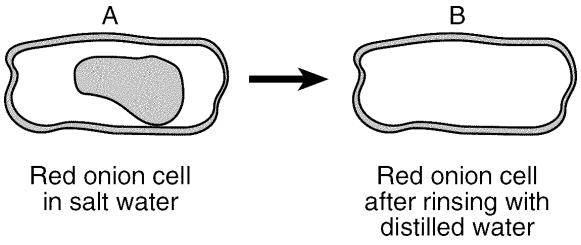
If the process illustrated in the diagram is interrupted by a chemical at point *X*, there would be an immediate effect on the release of

A. chlorophyll B. nitrogen

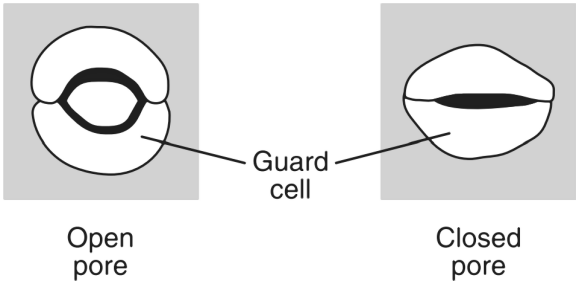
C. carbon dioxide D. oxygen

27. A student prepared a wet-mount slide of some red onion cells and then added some salt water to the slide. The student observed the slide using a compound light microscope. Diagram *A* is typical of what the student observed after adding salt water.

Complete diagram *B* to show how the contents of the red onion cells should appear if the cell were then rinsed with distilled water for several minutes.



28. The diagram below represents a change in guard cells that open and close pores in a plant. Th.is change directly helps to



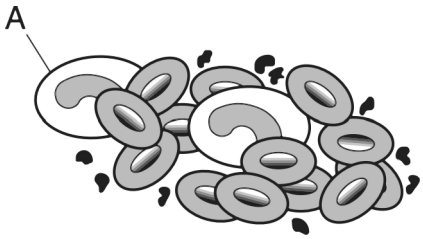
A. increase heterotrophic nutrition

B. absorb minerals

C. regulate water loss

D. reduce seed production

29. The diagram below represents a microscopic view of blood. Cell A protects the body by producing specific chemicals in response to pathogens. Cell A is



A. a red blood cell B. a bacteria cell

C. an insulin-producing cell D. a white blood cell

30. Which sequence represents the correct order of levels of organization found in a complex organism?

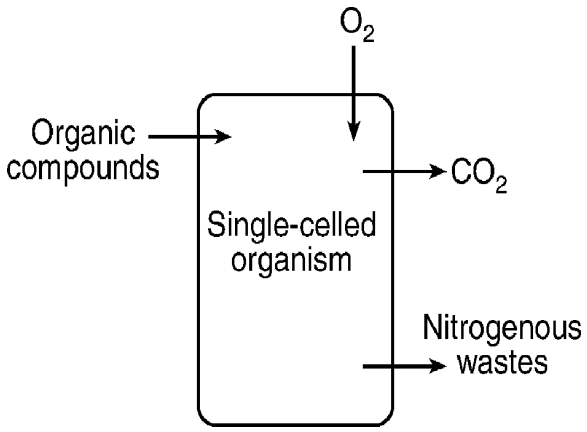
A. cells → organelles → organs → organ systems → tissues

B. tissues → organs → organ systems → organelles → cells

C. organelles → cells → tissues → organs → organ systems

D. organs → organ systems → cells → tissues → organelles

31. The arrows in the diagram below indicate the movement of materials into and out of a singlecelled organism.



The movements indicated by all the arrows are directly involved in

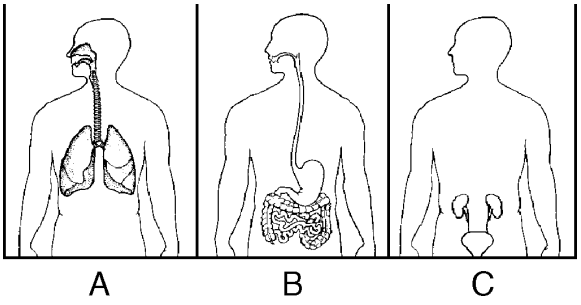
A. the maintenance of homeostasis

B. photosynthesis, only

C. excretion, only

D. the digestion of minerals

32. The diagram below represents three human body systems.

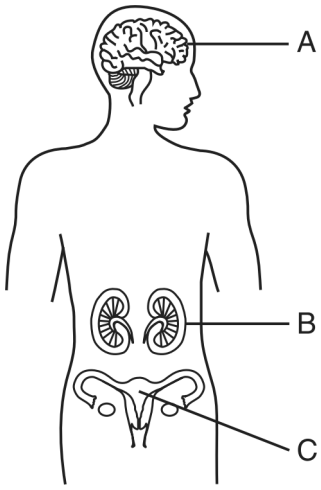


Which row in the chart below correctly shows what systems A, B, and C provide for the human body?

Row	System A	System B	System C
(1)	blood cells	glucose	hormones
(2)	oxygen	absorption	gametes
(3)	gas exchange	nutrients	waste removal
(4)	immunity	coordination	carbon dioxide

A. (1) B. (2) C. (3) D. (4)

33. Base your answer(s) to the following question(s) on the diagram below and on your knowledge of biology.



Failure of structure A to function properly would most directly disrupt

A. autotrophic nutrition
B. chromosome replication
C. cellular communication
D. biological evolution

34. Structure B represents

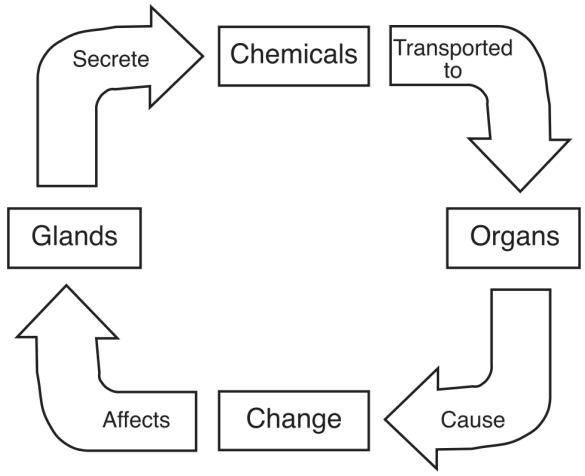
A. cells, only
B. cells and tissues, only
C. an organ with cells and tissues
D. a complete system with organs, tissues, and cells

35. Which words best complete the lettered blanks in the two sentences below?

Organic compounds, such as proteins and starches, are too A to diffuse into cells. Proteins are digested into B and starches are digested into C.

A. *A*—large, *B*—simple sugars, *C*—amino acids
B. *A*—small, *B*—simple sugars, *C*—amino acids
C. *A*—large, *B*—amino acids, *C*—simple sugars
D. *A*—small, *B*—amino acids, *C*—simple sugars

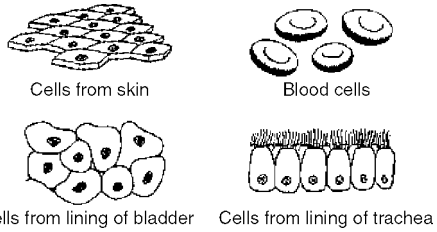
36. The diagram below represents an interaction between parts of an organism.



The term *chemicals* in this diagram represents

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

37. Some human body cells are shown in the diagrams below.



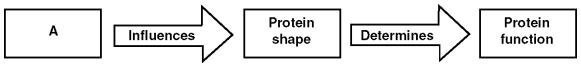
These groups of cells represent different

A. tissues in which similar cells function together
B. organs that help to carry out a specific life activity
C. systems that are responsible for a specific life activity
D. organelles that carry out different functions

38. Even though each body cell in an individual contains the same DNA, the functions of muscle cells and liver cells are not the same because

A. mutations usually occur in genes when muscle cells divide
B. liver tissue develops before muscle tissue
C. liver cells produce more oxygen than muscle cells
D. liver cells use different genes than muscle cells

39. The diagram below provides some information concerning proteins.



Which phrase is represented by *A*?

A. sequence of amino acids

B. sequence of simple sugars

C. sequence of starch molecules

D. sequence of ATP molecules

40. When a person's teeth are being x rayed, other body parts of this person are covered with a protective lead blanket to prevent

A. loss of hair

B. increase in cell size

C. changes in DNA molecules

D. changes in glucose structure

41. As a result of sexual reproduction, an organism can pass a gene mutation to its offspring if the mutation occurs in

A. a body cell

B. a gamete

C. liver tissue

D. white blood cells

42. Base your answer to the following question on the portion of the mRNA codon chart and information below.

AUU, AUC, AUA } ILE (Isoleucine) AUG } MET (Methionine)	ACU, ACC, ACA, ACG } THR (Threonine)	AAU, AAC } ASN (Asparagine) AAA, AAG } LYS (Lysine)	AGU, AGC } SER (Serine) AGA, AGG } ARG (Arginine)

Series I represents three mRNA codons. Series II includes a mutation of series I.

Series I AGAUCGAGU

Series II ACAUCGAGU

How would the amino acid sequence produced by the mutant strand (series II) compare to the amino acid sequence produced by series I?

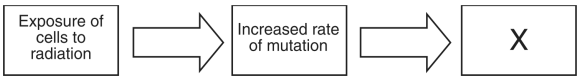
A. The amino acid sequence would be shorter.

B. One amino acid in the sequence would change.

C. The amino acid sequence would remain unchanged.

D. More than one amino acid in the sequence would change.

43. Which phrase belongs in box *X* of the flowchart below?



A. Increased chance of cancer

B. Increase in the production of functional gametes

C. Decrease in genetic variability of offspring

D. Decreased number of altered genes

44. A change in the base subunit sequence during DNA replication can result in

A. variation within an organism

B. rapid evolution of an organism

C. synthesis of antigens to protect the cell

D. recombination of genes within the cell

45. Flower color in primrose plants is controlled by an individual gene. The sudden appearance of one white flowering primrose in a plant breeder's field of red primrose plants is most likely due to

A. a change in the amount of glucose produced during photosynthesis

B. the use of a new natural fertilizer on the field

C. rapid mitotic divisions within the developing seeds

D. a random change in the structure of DNA during meiosis

46. A characteristic of mutations is that they usually

A. are caused only by the events of mitosis

B. do not occur at random

C. result in different genetic sequences

D. occur to meet the needs of a species

47. A colony of red bacteria is allowed to reproduce for 16 generations. A scientist examines the colony at the end of the time and notes that all the individuals are almost identical in all characteristics. This evidence suggest that the bacteria

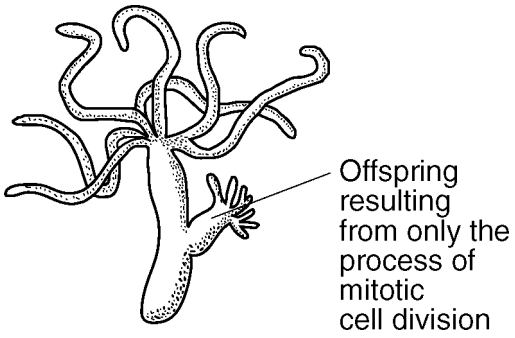
A. did not receive the proper nutrients

B. reproduce sexually

C. exchange genetic material

D. reproduced asexually

48. The organism represented below is multicellular, heterotrophic, and completely aquatic.



Which other characteristics could be used to describe this organism?

A. carries out photosynthesis and needs oxygen

B. deposits cellular wastes on land and decomposes dead organisms

C. reproduces asexually and is a consumer

D. reproduces in a water habitat and is a producer

49. Hereditary traits are transmitted from generation to generation by means of

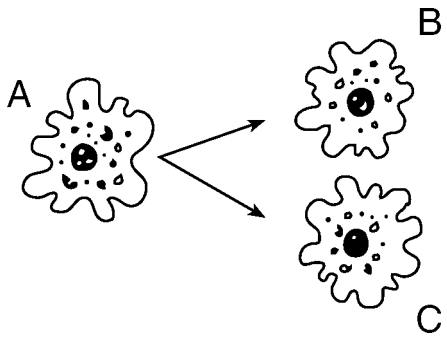
A. specific sequences of bases in DNA in reproductive cells

B. proteins in body cells

C. carbohydrates in body cells

D. specific starches making up DNA in reproductive cells

50. The diagram below represents single-celled organism *A* dividing by mitosis to form cells *B* and *C*.



Cells *A*, *B*, and *C* all produced protein *X*. What can best be inferred from this observation?

A. Protein *X* is found in all organisms.

B. The gene for protein *X* is found in singlecelled organisms, only.

C. Cells *A*, *B*, and *C* ingested food containing the gene to produce protein *X*.

D. The gene to produce protein *X* was passed from cell *A* to cells *B* and *C*.

51. The accompanying data table summarizes the results of an investigation in which seeds from the same plant were grown under different conditions of temperature and relative humidity.

Temperature: 20°C Relative Humidity: 20%		Temperature: 31°C Relative Humidity: 95%	
Genes Present in Cells of Organism	Appearance of Organism	Genes Present in Cells of Organism	Appearance of Organism
AA	red	AA	white
Aa	red	Aa	white
aa	white	aa	white

Which conclusion can be drawn from the information in the data table?

A. Color in this species is determined by genes, only.

B. Many characteristics are not inherited.

C. Mutations occur only when plants are grown at low temperatures.

D. There is an interaction between environment and heredity.

52. When humans first domesticated dogs, there was relatively little diversity in the species. Today, there are many variations such as the German shepherd and the dalmatian. This increase in diversity is most closely associated with

A. cloning of selected body cells

B. selective breeding

C. mitotic cell division

D. environmental influences on inherited traits

53. One way to produce large numbers of genetically identical offspring is by

A. cloning

B. fertilization

C. changing genes by agents such as radiation or chemicals

D. inserting a DNA segment into a different DNA molecule

54. For those individuals who have an allergic reaction to cats, a company in Los Angeles promises relief. They offer a new line of cats genetically modified to eliminate or reduce their allergy-causing properties. The development of this new line of cats most likely involved

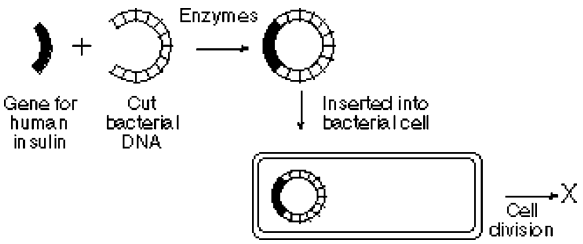
A. using natural selection to produce a new variety of cat

B. altering the reproductive rate of cats

C. changing the behavior of cats

D. manipulating the DNA of cats

55. The accompanying diagram illustrates some key steps of a procedure in one area of biotechnology.



The letter *X* most likely represents

A. bacterial cells that are unable to synthesize insulin

B. human cells that are able to synthesize antibodies

C. bacterial cells that are able to synthesize insulin

D. human cells that are unable to resist antibiotics

56. Some farmers currently grow genetically engineered crops. An argument *against* the use of this technology is that

A. it increases crop production

B. it produces insect-resistant plants

C. its long-term effects on humans are still being investigated

D. it always results in crops that do not taste good

57. The first life-forms to appear on Earth were most likely

A. complex single-celled organisms

B. complex multicellular organisms

C. simple single-celled organisms

D. simple multicellular organisms

58. The information below was printed on a calendar of important events in the field of biology.

1859

Darwin Publishes

On the Origin of Species by Natural Selection

This information is most closely associated with

A. an explanation for the change in types of minerals in an area through ecological succession

B. the reasons for the loss of biodiversity in all habitats on Earth

C. an attempt to explain the structural similarities observed among diverse living organisms

D. the effect of carrying capacity on the size of populations

59. The different tools used during the beaks of finches lab represented

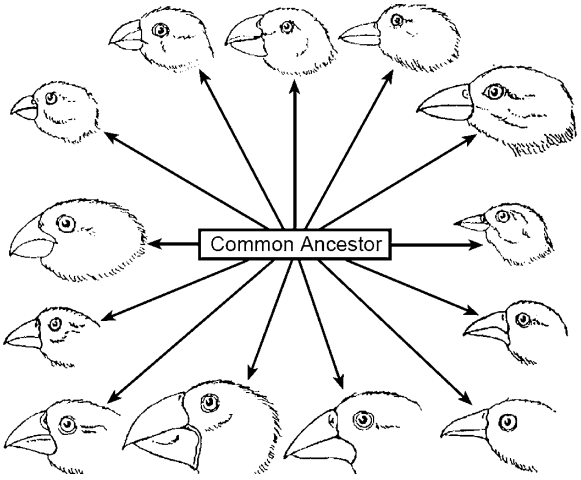
A. feeding adaptations in finches

B. nest construction adaptations

C. variations in seed size

D. variations in ecosystems

60. The diversity within the wild bird species in the accompanying diagram can best be explained by which process?



A. natural selection

B. asexual reproduction

C. ecological succession

D. mitotic cell division

61. Which statement is *not* part of the concept of natural selection?

A. Individuals that possess the most favorable variations will have the best chance of reproducing.

B. Variation occurs among individuals in a population.

C. More individuals are produced than will survive.

D. Genes of an individual adapt to a changing environment.

62. Which factor could be the cause of the other three in an animal species?

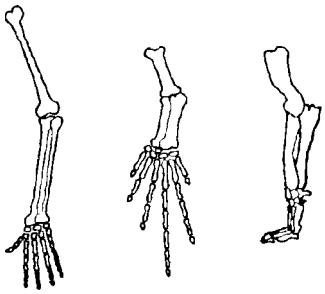
A. the inability of the species to adapt to changes

B. a lack of genetic variability in the species

C. extinction of the species

D. a decrease in the survival rate of the species

63. The bones in the forelimbs of three mammals are shown below.



For these mammals, the number, position, and shape of the bones most likely indicates that they may have

A. developed in a common environment

B. developed from the same earlier species

C. identical genetic makeup

D. identical methods of obtaining food

64. Beak structures differ between individuals of one species of bird. These differences most likely indicate

A. the presence of a variety of food sources

B. a reduced rate of reproduction

C. a large supply of one kind of food

D. an abundance of predators

65. Variation in the offspring of sexually reproducing organisms is the direct result of

A. sorting and recombining of genes

B. replication and cloning

C. the need to adapt and maintain homeostasis

D. overproduction of offspring and competition

66. Which statement is best supported by fossil records?

A. Many organisms that lived in the past are now extinct.

B. Species occupying the same habitat have identical environmental needs.

C. The struggle for existence between organisms results in changes in populations.

D. Structures such as leg bones and wing bones can originate from the same type of tissue found in embryos.

67. It was once thought that decaying meat turned into maggots (fly larvae). Careful experimentation by scientists demonstrated that maggots actually come from fly eggs and not meat. These experiments illustrate that new individual result only from

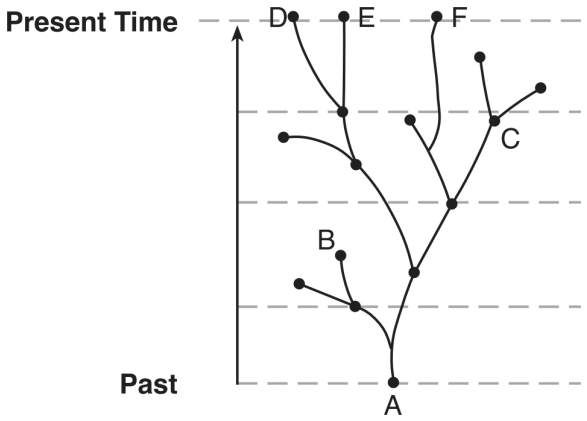
A. genetic engineering

B. reproduction and development

C. nutrition and replication

D. metabolic homeostasis

68. The diagram below illustrates possible evolutionary pathways of some species.



Which statement is a valid inference based on the information in the diagram?

A. Species *A* is the common ancestor of all life on Earth.

B. Species *D* is more closely related to species *E* than to species *F*.

C. Species *B* is the ancestor of species *F*.

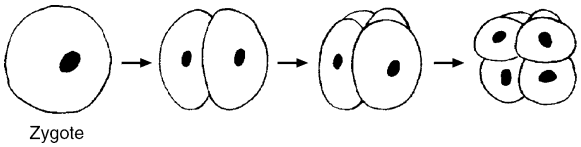
D. Species *C* is the ancestor of species that exist at the present time.

69. Write one or more paragraphs that compare the two methods of reproduction, asexual and sexual.

Your answer must include at least:

- one similarity between the two methods
- one difference between the two methods
- one example of an organism that reproduces by asexual reproduction
- one example of an organism that reproduces by sexual reproduction

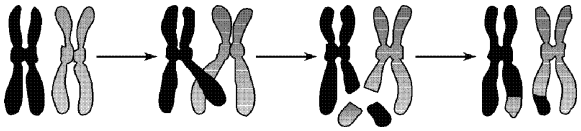
70. The accompanying diagram represents some stages of early embryonic development.



Which process is represented by the arrows in the diagram?

A. meiosis
B. fertilization
C. mitosis
D. evolution

71. The diagram shows a process that can occur during meiosis.

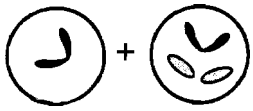


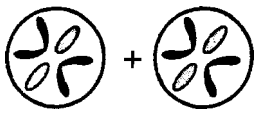
The most likely result of this process is

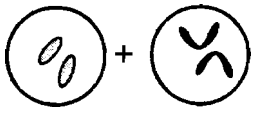
A. a new combination of inheritable traits that can appear in the offspring
B. an inability to pass either of these chromosomes on to offspring
C. a loss of genetic information that will produce a genetic disorder in the offspring
D. an increase in the chromosome number of the organism in which this process occurs

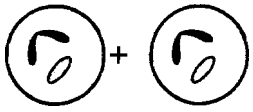
72. The accompanying diagram represents chromosomes in a zygote.

Which diagrams best illustrate the daughter cells that result from normal mitotic cell division of this zygote?

A.


B.


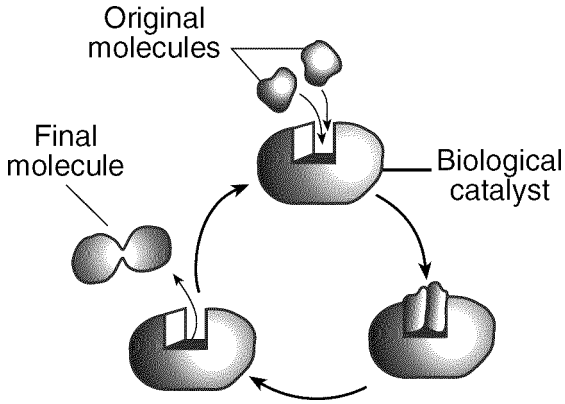
C.


D.


73. Human egg cells are most similar to human sperm cells in their

A. degree of motility
B. amount of stored food
C. chromosome number
D. shape and size

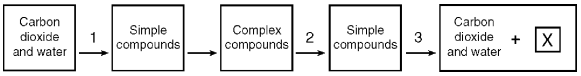
74. The diagram below represents a series of reactions that can occur in an organism.



This diagram best illustrates the relationship between

A. enzymes and synthesis
B. amino acids and glucose
C. antigens and immunity
D. ribosomes and sugars

75. Base your answer(s) to the following question(s) on the diagram below and on your knowledge of biology. The arrows in the diagram represent biological processes.



Identify one type of organism that carries out process 1.

76. Explain why process 2 is essential in humans.

77. Identify process 3.

78. Identify what letter *X* represents.

79. Plants such as the Venus flytrap produce chemical compounds that break down insects into substances that are usable by the plant. The chemical compounds that break down the insects are most likely

A. fats
B. minerals
C. biological catalysts
D. complex carbohydrates

80. The diagram below represents a process that occurs in organisms.

Which row in the chart indicates what *A* and *B* in the boxes could represent?

Row	A	B
(1)	starch	proteins
(2)	starch	amino acids
(3)	protein	amino acids
(4)	protein	simple sugars

A. (1) B. (2) C. (3) D. (4)

81. The calcium concentration in the root cells of certain plants is higher than in the surrounding soil. Calcium may continue to enter the root cells of the plant by the process of

A. diffusion B. respiration

C. active transport D. protein synthesis

82. The equation below represents a summary of a biological process.

carbon dioxide + water → glucose + water + oxygen

This process is completed in

A. mitochondria B. ribosomes

C. cell membranes D. chloroplasts

83. Which process is directly used by autotrophs to store energy in glucose?

A. diffusion B. photosynthesis

C. respiration D. active transport

84. Most of the starch stored in the cells of a potato is composed of molecules that originally entered these cells as

A. enzymes B. simple sugars

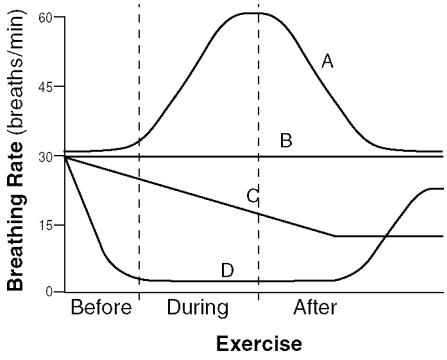
C. amino acids D. minerals

85. Which part of a molecule provides energy for life processes?

A. carbon atoms B. oxygen atoms

C. chemical bonds D. inorganic nitrogen

86. Which line in the graph below best illustrates an effect of the carbon dioxide level in the blood on breathing rate before, during, and after a period of exercise?



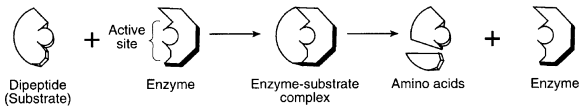
A. *A* B. *B* C. *C* D. *D*

87. The process of active transport requires the most direct use of

A. carbon dioxide B. amino acids

C. ATP D. glucose

88. A process that occurs in the human body is shown in the diagram below.



What would happen if a temperature change caused the shape of the active site to be altered?

A. The dipeptide would digest faster.

B. The dipeptide would digest slower or not at all.

C. The amino acids would combine faster.

D. The amino acids would combine slower or not at all.

89. 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

90. Organisms undergo constant chemical changes as they maintain an internal balance known as

A. interdependence B. homeostasis

C. synthesis D. recombination

91. What will most likely result if a diabetic injects an overdose of insulin?

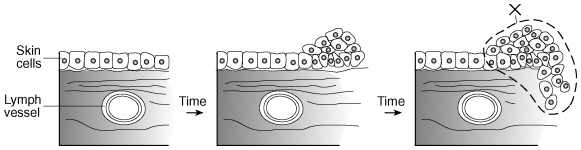
A. a serious infection in the pancreas

B. an increase in the production of pancreatic enzymes

C. an accumulation of wastes in the bloodstream

D. a dangerous drop in blood sugar levels

92. The diagram below shows the growth pattern of some skin cells in the human body after they have been exposed to ultraviolet radiation.



The cells in area *X* are most likely

A. red blood cells

B. cancer cells

C. white blood cells

D. sex cells

93. Allergic reactions are most closely associated with

A. the action of circulating hormones

B. a low blood sugar level

C. immune responses to usually harmless substances

D. the shape of red blood cells

94. Which disease damages the human immune system, leaving the body open to certain infectious agents?

A. flu

B. AIDS

C. chicken pox

D. pneumonia

95. Many vaccinations stimulate the immune system by exposing it to

A. antibodies

B. enzymes

C. mutated genes

D. weakened microbes

96. Which substances may form in the human body due to invaders entering the blood?

A. nutrients

B. vaccines

C. antibodies

D. red blood cells

97. Certain microbes, foreign tissues, and some cancerous cells can cause immune responses in the human body because all three contain

A. antigens

B. enzymes

C. fats

D. cytoplasm

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

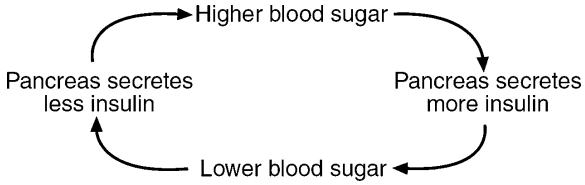
A. a decrease in the amount of glucose in the blood

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

99. The accompanying diagram shows the interaction between blood sugar levels and pancreatic activity.



This process is an example of

A. a feedback mechanism maintaining homeostasis

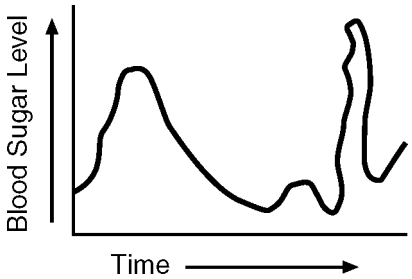
B. an immune system responding to prevent disease

C. the digestion of sugar by insulin

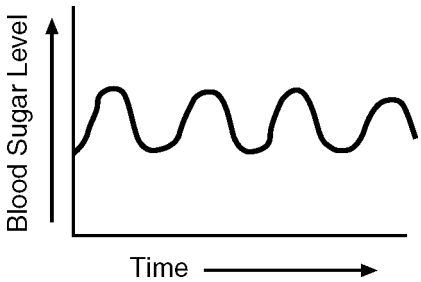
D. the hormonal regulation of gamete production

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

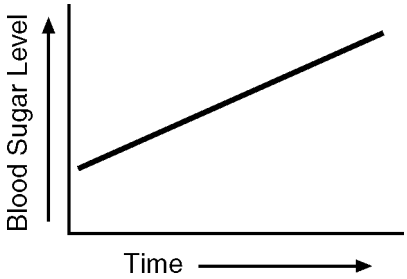
A.



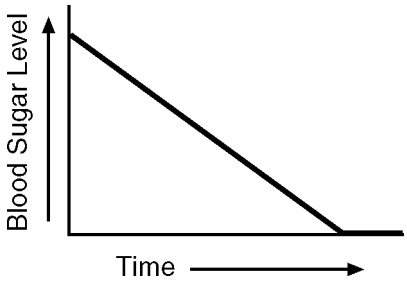
B.



C.



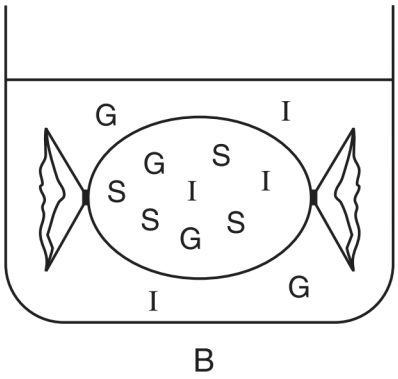
D.



Midterm Review - Living Environment 01/11/2016

1.
Answer: D

2.
Answer:

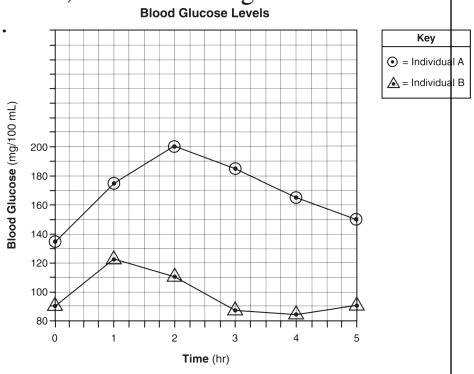


3.
Answer: The color changes from amber to blue black.

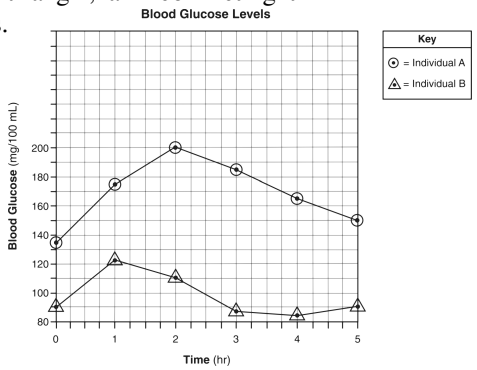
4.
Answer: A

5.
Answer: D

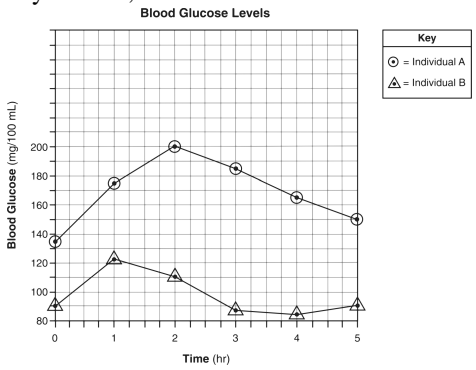
6.
Answer: correctly plotting the data for individual A, surrounding each point with a small circle, and connecting the points.



7.
Answer: correctly plotting the data for individual B, surrounding each point with a small triangle, and connecting the points.



8.
Answer: marking an appropriate scale, without any breaks, on each labeled axis.



9.
Answer: A

10.
Answer: D

11.
Answer: B

12.
Answer: B

13.
Answer: A

14.
Answer: B

15.
Answer: *A* = vacuole (or food vacuole) *B* = vacuole (or contractile vacuole) *C* = nucleus *D* = cell membrane

16.
Answer: *A* = Food is digested (or stored) in the vacuole. *B* = Liquid wastes are stored in the vacuole. *C* = The nucleus controls the activities of the cell. *D* = The cell membrane controls the movement of molecules into and out of the cell.

17.
Answer: *A* = digestive system *B* = excretroy system *C* = nervous system *D* = excretory system, lining of difestive system (or respiratory system)

18.
Answer: D

19.
Answer: D

20.
Answer: C

21.
Answer: B

22.
Answer: A

23.
Answer: C

24.
Answer: A

25.
Answer: C

26.
Answer: D

27.
Answer: Answer should show a shaded area that is larger than the shaded area in diagram *A*.

28.
Answer: C

29.
Answer: D

30.
Answer: C

31.
Answer: A

32.
Answer: C

33.
Answer: C

34.
Answer: C

35.
Answer: C

36.
Answer: C

37.
Answer: A

38.
Answer: D

39.
Answer: A

40.
Answer: C

41.
Answer: B

42.
Answer: B

43.
Answer: A

44.
Answer: A

45.
Answer: D

46.
Answer: C

47.
Answer: D

48.
Answer: C

49.
Answer: A

50.
Answer: D

51.
Answer: D

52.
Answer: B

53.
Answer: A

54.
Answer: D

55.
Answer: C

56.
Answer: C

57.
Answer: C

58.
Answer: C

59.
Answer: A

60.
Answer: A

61.
Answer: D

62.
Answer: B

63.
Answer: B

64.
Answer: A

65.
Answer: A

66.
Answer: A

67.
Answer: B

68.
Answer: B

69.
Answer: Similarities between asexual and sexual reproduction:

- both produce new organisms
- both transfer genetic material

Differences between asexual and sexual reproduction:

- no fusion of nuclei in asexual reproduction; fusion of gamete nuclei in sexual reproduction
- asexual reproduction involves no sex cells; sexual reproduction involves sex cells, the sperm and the egg
- offspring of asexual reproduction is from one parent; offspring of sexual reproduction is from a combination of two parents' DNA
- in asexual reproduction, there is little or no variation (e.g., binary fission); in sexual reproduction, there is greater variation

Examples of organisms that reproduce by asexual reproduction:

- bacteria
- hydra
- yeast
- planaria
- ameba
- bread mold

Examples of organisms that reproduce by sexual reproduction:

- humans
- fish
- grasshoppers
- most animals
- earthworms
- flowering plants

70.
Answer: C

71.
Answer: A

72.
Answer: B

73.
Answer: C

74.
Answer: A

75.
Answer: plants, autotroph, producer, or trees

76.
Answer: to make food molecules small enough to be transported (or diffused) OR so that energy can be released

77.
Answer: respiration

78.
Answer: ATP or energy

79.
Answer: C

80.
Answer: C

81.
Answer: C

82.
Answer: D

83.
Answer: B

84.
Answer: B

85.
Answer: C

86.
Answer: A

87.
Answer: C

88.
Answer: B

89.
Answer: A

90.
Answer: B

91.
Answer: D

92.
Answer: B

93.
Answer: C

94.
Answer: B

95.
Answer: D

96.
Answer: C

97.
Answer: A

98.
Answer: A

99.
Answer: A

100.
Answer: B