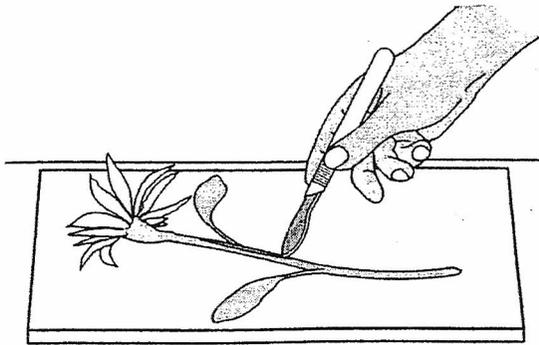


# EOG PRACTICE TEST #5



1 During a dissection activity, a student accidentally knocks a scalpel off the lab table. Which of these actions should the student take?

- A Use both hands to protect the eyes from the scalpel
- B Try to catch the scalpel before it reaches the floor
- C Pick up the scalpel, avoiding the sharp edge
- D Get a new scalpel, leaving the dropped one

2 A drain cleaner consists of sodium hydroxide and aluminum. When the drain cleaner is added to water, bubbles of hydrogen are produced, and the solution becomes very hot. Which of these best describes what happens to form the bubbles when the cleaner is added to water?

- A A chemical reaction
- B Condensation
- C A physical change
- D Evaporation

#3 Which geological process is most important in supporting the theory of evolution?

- A. Movement of glaciers
- B. Eruption of volcanoes
- C. Occurrence of earthquakes
- D. Formation of sedimentary rock

#4 In the past, a large supercontinent known as pangea was fragmented into several pieces, each part being part of a mobile plate of the lithosphere. These pieces were to become Earth's current continents. Which most likely explains how the continents moved to their current position?

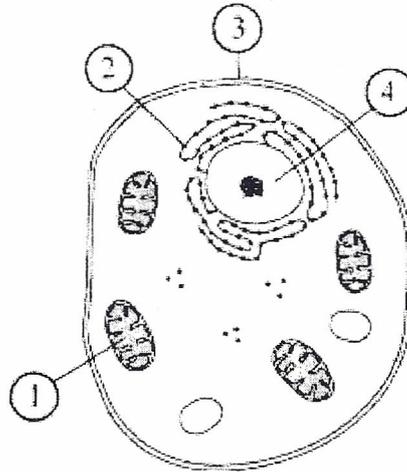
- A. Superposition of crustal layers
- B. Tectonic activity in Earth's crust
- C. Tidal shifts from the moon orbiting Earth
- D. Asteroid bombardment of Earth's surface

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# 5 Which characteristic is found in multi-celled organisms but not in single-celled organisms?

- A. different tissues and organs
- B. movement over time from one place to another
- C. the ability to release chemical energy from food
- D. reproduction that produces offspring identical to the parent

# 6 The diagram below shows an animal cell.



# 7 Which structure allows materials into and out of the cell?

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

# 8 One difficulty in the fight against viral diseases is the virus's ability to resist what?

- A. antibiotics
- B. antibodies
- C. cancer
- D. vaccines

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#9. According to the theory of continental drift, which best explains how species were separated?

- A. law of superposition
- B. creation of unconformities
- C. movement of tectonic plates
- D. chemical weathering of rocks

#10. How could volcanic eruptions in Indonesia result in crop failure in Europe?

- A. Ash in the atmosphere causes a drought.
- B. Ash in the atmosphere causes heavy rains.
- C. Ash in the atmosphere blocks out sunlight.
- D. Ash in the atmosphere changes prevailing wind direction.

#11. A student examines a specimen under a microscope. She sees a single cell that appears to be moving and consuming something. What is she most likely observing?

- A. an alga
- B. an amoeba
- C. a plant cell
- D. a fungi cell

#12. Which organism would be considered multicellular?

- A. a jellyfish
- B. an amoeba
- C. a bacterium
- D. a paramecium

# 13 A student conducts an investigation using a flashlight, water, and milk.

1. She shines the light through a bowl of water.
2. She sees a spot of light on the wall behind the bowl.
3. She predicts that adding milk to the water will cause the spot to become white.
4. She adds milk and sees that the spot on the wall becomes red.

Which part of this investigation is the hypothesis?

- A. adding the milk to the water in the bowl
- B. observing the spot of light behind the bowl of water
- C. seeing that the spot becomes red when milk is added to the water
- D. predicting that adding the milk will cause the spot to become white

# 14 The table below shows some properties of the elements hydrogen and oxygen and the compound water at room temperature.

Properties

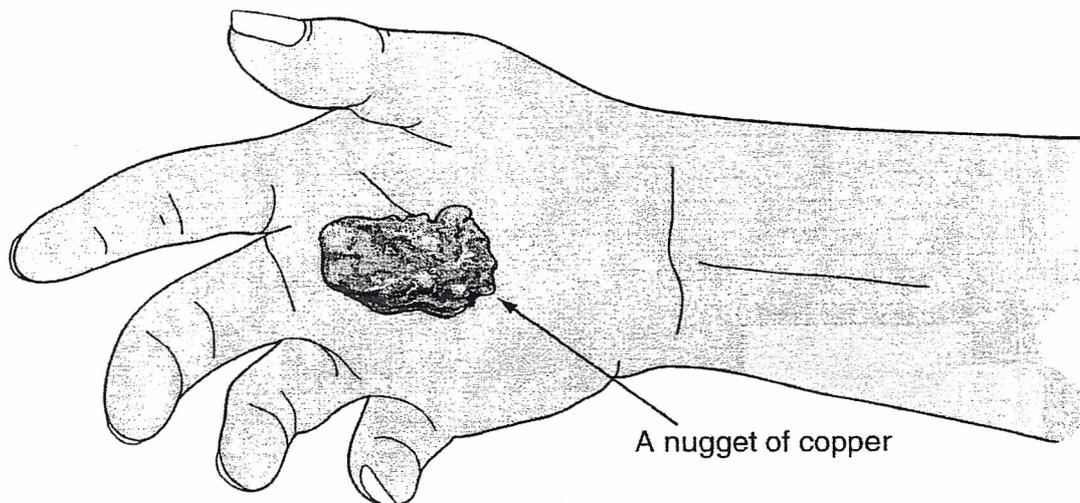
Property	Hydrogen	Oxygen	Water
Density	0.09 g/L	1.4 g/L	0.99 g/cm <sup>3</sup>
State	gas	gas	liquid
Element Category	non-metal	non-metal	n/a

What can be determined from the information in the table?

- A. Compounds can be easily separated into their component elements.
- B. Compounds have different properties than their component elements.
- C. At room temperature, all elements change state and form compounds.
- D. At room temperature, all elements are gases and all compounds are liquids.

# 15 What happens when a drop of water is placed on a piece of wax paper?

- A The water molecules quickly change state.
- B Surface tension holds the water molecules together.
- C The water molecules disperse randomly throughout the paper.
- D Adhesion causes the water molecules to attach to the wax paper.



Nugget Sample	Nugget 1	Nugget 2
Mass of Nugget (g)	27.95	18.56
Volume of Nugget (cm <sup>3</sup> )	3.13	2.09
Density of Nugget (g/cm <sup>3</sup> )	8.93	8.88
Average Density of Copper (g/cm <sup>3</sup> )	8.91	

#16 A field geologist collected data for two nuggets of copper and determined their density. Which two pieces of equipment did the geologist most likely use to determine the density of the copper nuggets?

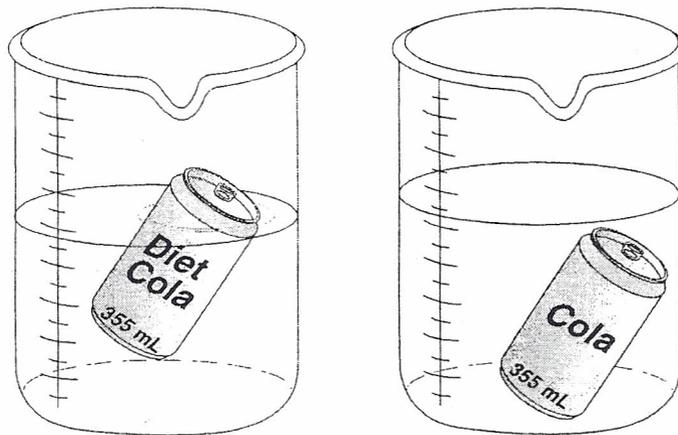
- A Balance and graduated cylinder
- B Metric ruler and beaker
- C Thermometer and Erlenmeyer flask
- D Specimen bottle and tweezers

#17 Which process below uses carbon dioxide and the sun's radiant energy to produce chemical energy?

- A Evaporation
- B Photosynthesis
- C Respiration
- D Decomposition

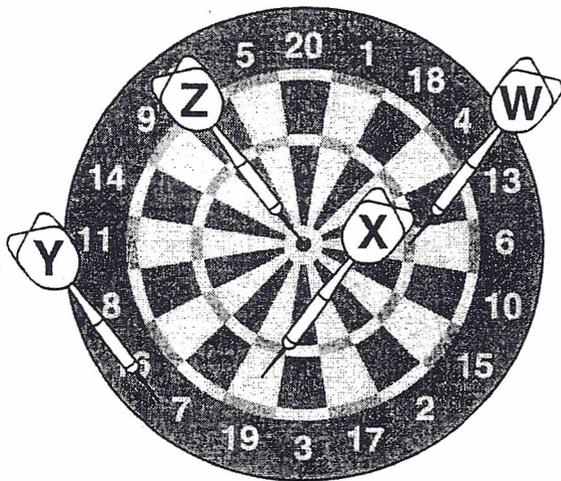
#18 According to the periodic table, all of the following are metals except —

- A sodium
- B zinc
- C fluorine
- D calcium



#19 A diet cola and a regular cola in identical cans are each placed in separate beakers containing water. Which of the following conclusions is the best for the experiment shown above?

- A The diet cola is less dense than the regular cola.
- B The diet cola has fewer calories than the regular cola.
- C There is more buoyant force on the can of diet cola than on the regular cola.
- D There is more liquid in the can of diet cola than in the regular cola.



#20 If the dartboard above is used to model an atom, which dart indicates where the protons and neutrons are located?

- A Dart W
- B Dart X
- C Dart Y
- D Dart Z

#21 When copper and oxygen chemically unite, they form —

- A an ion
- B a gas
- C a compound
- D a mixture

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#22 A student made a geologic column.

### Geologic Column

<p><b>Cenozoic Era</b> (Began 65 million years ago) <i>Homo sapiens</i></p>
<p><b>Mesozoic Era</b> (Began 245 million years ago) <i>Dinosaurs, first mammals,</i> <i>first birds</i></p>
<p><b>Paleozoic Era</b> (Began 544 million years ago) <i>First fish, first amphibians,</i> <i>first insects, first reptiles,</i> <i>first land plants</i></p>
<p><b>Precambrian Era</b> (Began 4.6 billion years ago) <i>Bacteria-like forms</i></p>

Which evidence must be carefully examined to determine that organisms changed over time?

- A. fossils
- B. soil type
- C. environment
- D. plate tectonics

# 23 The table lists densities of various metals.

Densities of Metals

Metal	Density g/cm <sup>3</sup>
aluminum	2.702
copper	8.92
iron	7.86
nickel	8.90
titanium	4.50
zinc	7.14

An unidentified metal has a mass of 46.5 g and occupies a volume of 5.92 cm<sup>3</sup>. Which is the unidentified metal?

- A. copper
- B. iron
- C. nickel
- D. zinc

# 24 What happens to the total mass of substances during a chemical reaction?

- A. Mass is lost.
- B. Mass doubles.
- C. Mass is gained.
- D. Mass remains the same.

# 25 Which is a difference between cohesion and adhesion?

- A. Cohesion decreases the density of water, while adhesion increases the density of water.
- B. Cohesion decreases the buoyancy of water, while adhesion increases the buoyancy of water.
- C. Cohesion occurs between two oxygen molecules, while adhesion occurs between two hydrogen molecules.
- D. Cohesion occurs between water molecules, while adhesion occurs between water and molecules of other substances.

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#26. What are the basic materials that form all living and nonliving substances through different combinations?

- A. chemicals
- B. compounds
- C. elements
- D. gases

#27 What is taking place when a gate made of solid iron rusts?

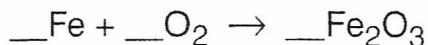
- A. The iron coating is wearing away.
- B. The iron is turning into a new element.
- C. The iron is combining chemically with other substances.
- D. The iron is physically breaking down into several elements.

#28 Elements on the periodic table can be recognized as alike in properties if they are located relative to each other in which way?

- A. same row
- B. same group
- C. same period
- D. same color of lettering

#29 Why would oil form the top layer when it is added to water?

- A. Oil is not soluble in water.
- B. The specific heat of water is less than that of oil.
- C. The density of oil is less than the density of water.
- D. The boiling point of water is less than the boiling point of oil.



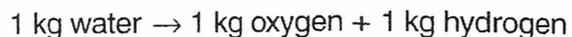
#30 Iron reacts with oxygen in the air to form iron oxide. The unbalanced equation for this reaction is shown above. What are the coefficients when this equation is balanced?

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

#31 A mutation in a DNA molecule is passed to offspring only when the mutation occurs in a —

- A neuron
- B cell wall
- C nuclear membrane
- D gamete

An inventor claims to have created a wind turbine that can convert 1 kilogram of water into 1 kilogram of oxygen and 1 kilogram of high-energy hydrogen fuel.

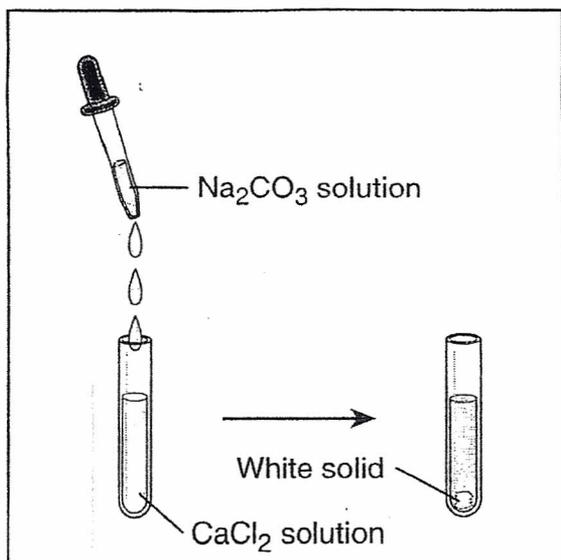


#32 This claim is false because it —

- A violates the principle of constant composition
- B contradicts the law of conservation of matter
- C ignores the strength of the theory of strings
- D violates the rules of gravitational attraction

#33 Fungi are different from plants in that fungi —

- A secrete enzymes
- B decompose organic waste
- C contain DNA
- D have cell walls



#34 A student added a small amount of sodium carbonate solution ( $\text{Na}_2\text{CO}_3$ ) to a test tube containing calcium chloride ( $\text{CaCl}_2$ ) solution. A white solid immediately appeared. What conclusion can be made from this experiment?

- A  Heat is generated by the chemical reaction.
- B  At least one product of the reaction is insoluble.
- C  Sodium carbonate is less soluble than calcium chloride.
- D  The chemical reaction requires energy to occur.

#35 Which of the following traits is most influenced by the environment?

- A  Body weight
- B  Eye color
- C  Blood type
- D  Color blindness

#36 Some students are testing water samples from different ponds. Exactly 20 milliliters of water is needed for each test. Students should measure the samples using a —

- A 25 mL graduated cylinder
- B 25 mL beaker
- C 50 mL measuring cup
- D 50 mL flask

#37 Two students make hot chocolate. One student pours the hot chocolate into a foam cup. The other student pours the hot chocolate into a metal cup. The metal cup becomes too hot to touch, but the foam cup can be held comfortably. The best explanation for this difference in temperature is that the foam cup —

- A heats up much faster than the metal cup
- B has a higher specific heat than the metal cup
- C is a better conductor of heat than the metal cup
- D has a specific heat that is similar to that of the metal cup

#38 How many elements are in the compound  $\text{Mg}(\text{OH})_2$ ?

- A 2
- B 3
- C 4
- D 5

#39 Which characteristic of water molecules makes water a good solvent?

- A Mass
- B Polarity
- C Potential energy
- D Chemical energy

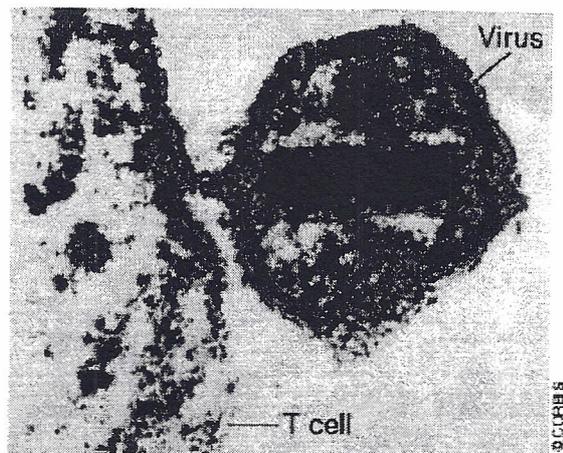
#40 Two students added a piece of zinc to a solution of hydrochloric acid in an open beaker. The mass of the products was found to be less than the total mass of the reactants. Which of the following statements best explains the loss of mass?

- A Zinc metal is more dense than the acid.
- B The chemical activity of the acid destroyed metal atoms.
- C A gas was released during the reaction.
- D Some of the zinc atoms failed to react.

Sample	pH
W	7.1
X	3.3
Y	5.2
Z	

#41 A student records the pH values of three samples and is asked to predict the pH of a fourth sample. The student is told that Sample Z is less acidic than Sample X but more acidic than Sample Y. Which of the following is a valid conclusion about the pH of Sample Z?

- A It is less than 3.3.
- B It is between 3.3 and 5.2.
- C It is between 5.2 and 7.1.
- D It is greater than 7.1.



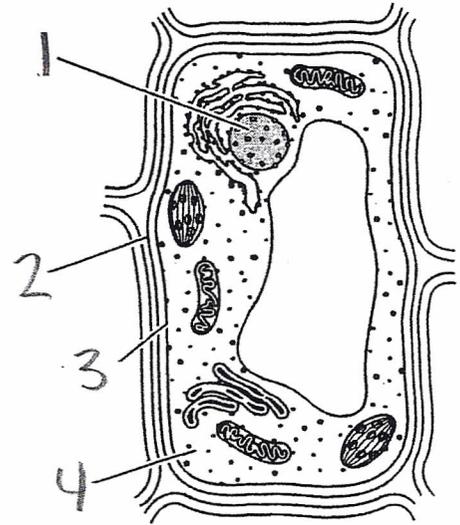
#42 The photograph above shows a virus attacking a human T cell (immune cell). Which disease could result if many T cells are destroyed in this manner?

- A AIDS
- B Tuberculosis
- C Chicken pox
- D Multiple sclerosis

#43

In a healthy forest, dead trees and limbs fall to the ground and decompose. Which of these statements best describes why decomposition is important to a forest ecosystem?

- A Nutrients are released when wood is broken down.
- B Worms produce oxygen used by other organisms.
- C Dead trees provide nest sites for many different species of birds.
- D Water is stored in dead trees and limbs.



#44 Which numbered part of the plant cell shown above primarily provides support for the plant's structure?

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

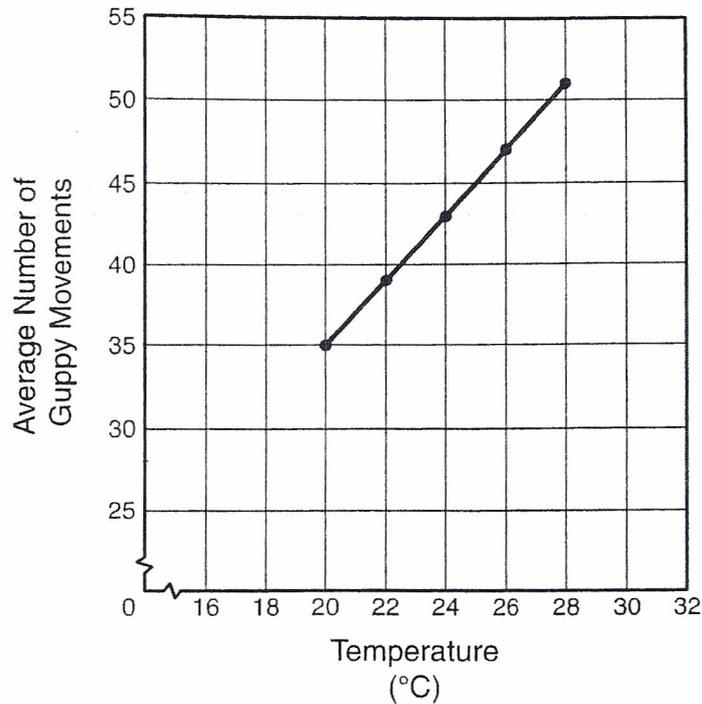
Spider	Type of Spider	Color	Length (cm)
Cobweb spider	Web spider	Brown	0.9
Wolf spider	Hunting spider	Brown	3.5
Jumping spider	Hunting spider	Black with orange or red spots	1.9
Yellow garden spider	Web spider	Yellow and black	2.5

#45

A student studying spiders creates the table shown above. What is the best conclusion the student can make based on this information?

- A Web spiders are larger than hunting spiders.
- B Wolf spiders are the largest of these spiders.
- C Hunting spiders usually have warning color patterns.
- D Jumping spiders are faster than yellow garden spiders.

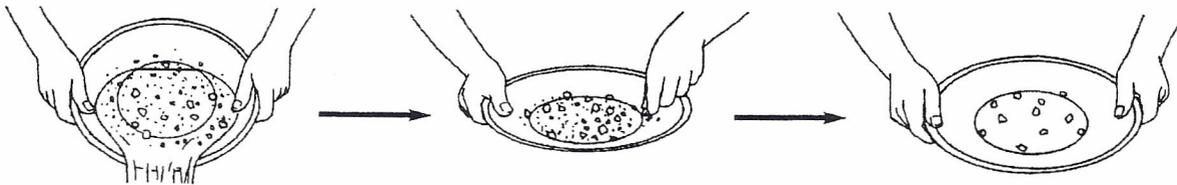
Effect of Temperature on Guppy Movements



#46

A student is studying guppies, a type of fish. The student learns that common guppies normally live in water with temperatures from 22°C to 30°C. The student counts the number of movements in 1 minute at several different temperatures. According to the student's graph, about how many movements on average would the guppies most likely make at 30°C?

- A 51
- B 55
- C 58
- D 60



#47

People pan for gold by scooping material from a streambed and shaking it in a pan as shown above. The gold nuggets in the pan can easily be separated from the sand and gravel because of their greater density. The material scooped from the streambed is an example of —

- A a solution
- B a mixture
- C an acid
- D an element

#48

How does using killed or weakened bacteria in an immunization help the body prevent infections?

Antibodies are formed that fight those types of bacteria.

The body develops a fever that kills beneficial bacteria.

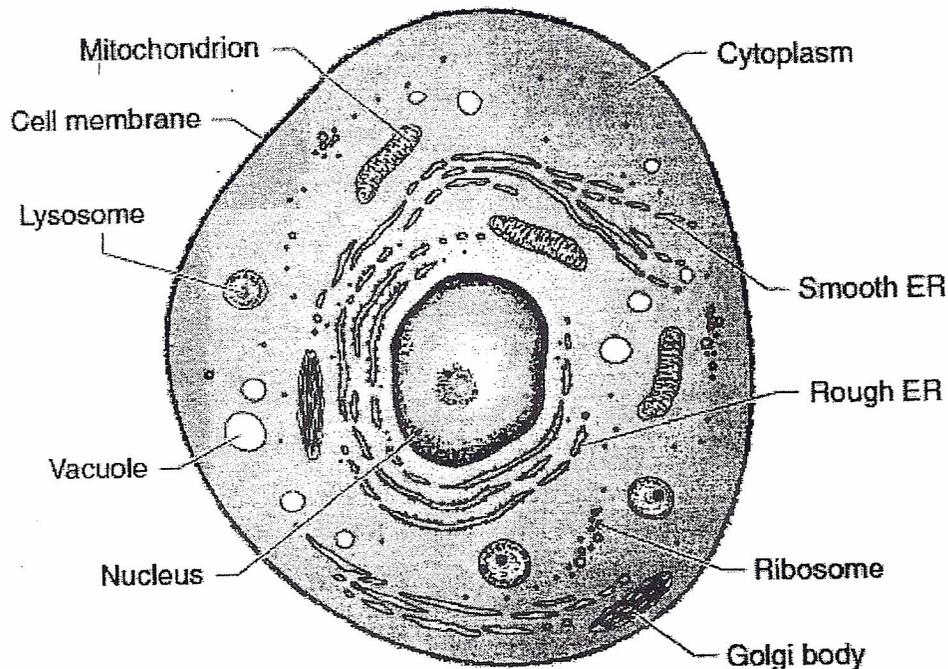
Bacterial reproductive cycles are disrupted.

Bacteria-fighting viruses are activated.

#49

One example of a genetic variation within a bird species is individual organisms having —

- A beaks of different lengths
- B broken wings
- C double-stranded DNA
- D pairs of chromosomes



#50

In animal cells like the one shown above, which organelle is used for storing water?

- Nucleus
- Mitochondrion
- Ribosome
- Vacuole

BE SURE YOU HAVE RECORDED ALL OF YOUR ANSWERS  
ON THE ANSWER DOCUMENT.

