

## Question: 1 of 50

Time Remaining: 00:59:52



 FLAG

Which of the following are the two major parts of the nervous system?



- Autonomic nervous system and somatic nervous system
- Autonomic nervous system and central nervous system
- Peripheral nervous system and central nervous system
- Peripheral nervous system and somatic nervous system

CONTINUE 

Question: 2 of 50

Time Remaining: 00:59:39



 FLAG

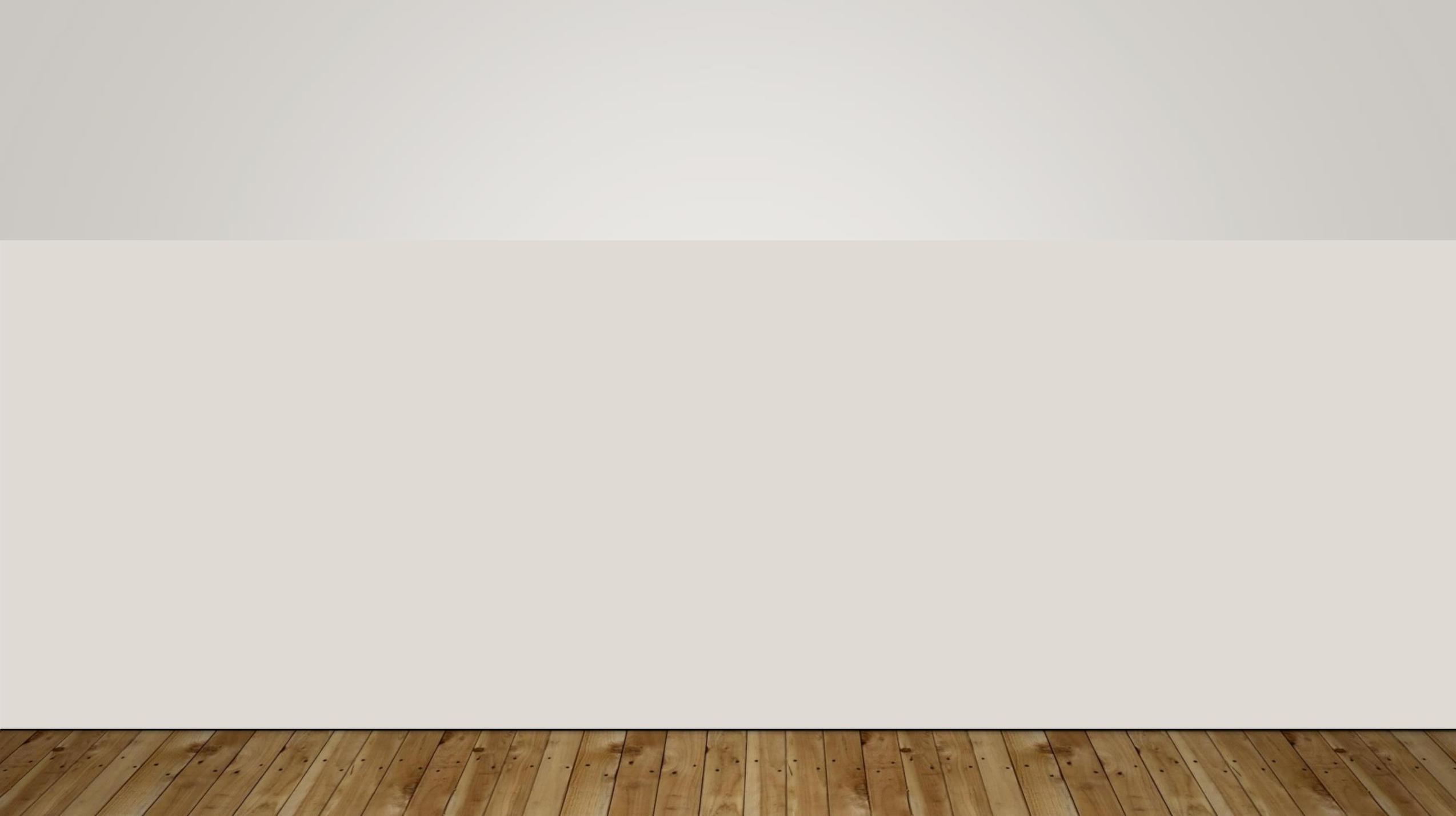
Which of the following substances is responsible for donating  $H^+$  ions to act as a buffer when blood pH rises?



- Carbon dioxide
- Carbon monoxide
- Oxygen
- Carbonic acid

PREVIOUS

CONTINUE



## Question: 3 of 50

Time Remaining: 00:59:28



 FLAG

Which of the following substances protects the skin from ultraviolet radiation?



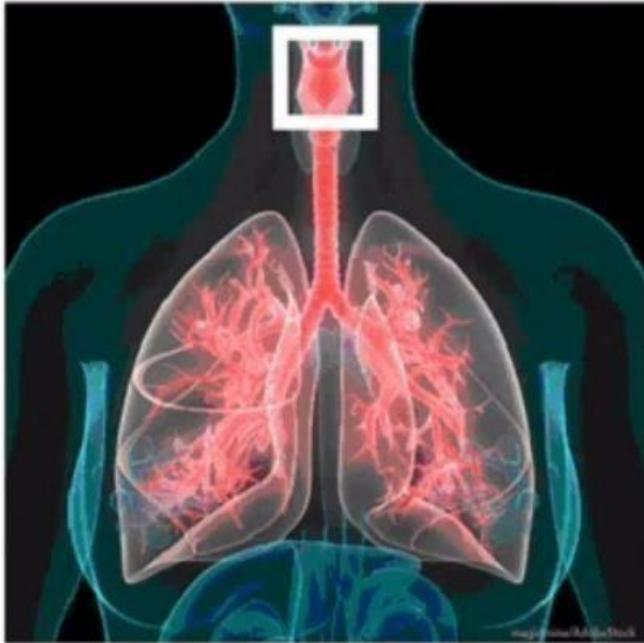
- Keratin
- Sebum
- Perspiration
- Melanin

PREVIOUS

CONTINUE



Which of the following describes the function of the highlighted structure in this image?



It contains vocal cords essential for speech.

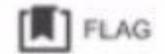
It is a tube that connects the larynx and pharynx to the lungs.

It transfers oxygen from the air to red blood cells.

It filters, warms, and moistens air as it enters the body.

Question: 5 of 50

Time Remaining: 00:58:55



The pleura is a connective tissue sheath that covers which of the following organs?



Heart

Liver

Spleen

Lung

PREVIOUS

CONTINUE

## Question: 6 of 50

Time Remaining: 00:58:38



 FLAG

In a phase diagram, which of the following is the term used for a substance held at a temperature and pressure where the solid, liquid, and gaseous states of a substance exist simultaneously?



- Absolute zero
- Critical point
- Triple point
- Critical temperature

PREVIOUS

CONTINUE

## Question: 7 of 50

Time Remaining: 00:57:59



 FLAG

In a certain plant, red flowers are dominant over white flowers. A plant heterozygous for red flowers and a plant with white flowers are crossed. Which of the following is the expected proportion of phenotypes in the next generation?



1 red, 3 white

2 red, 2 white

3 red, 1 white

4 red, 0 white

PREVIOUS

CONTINUE

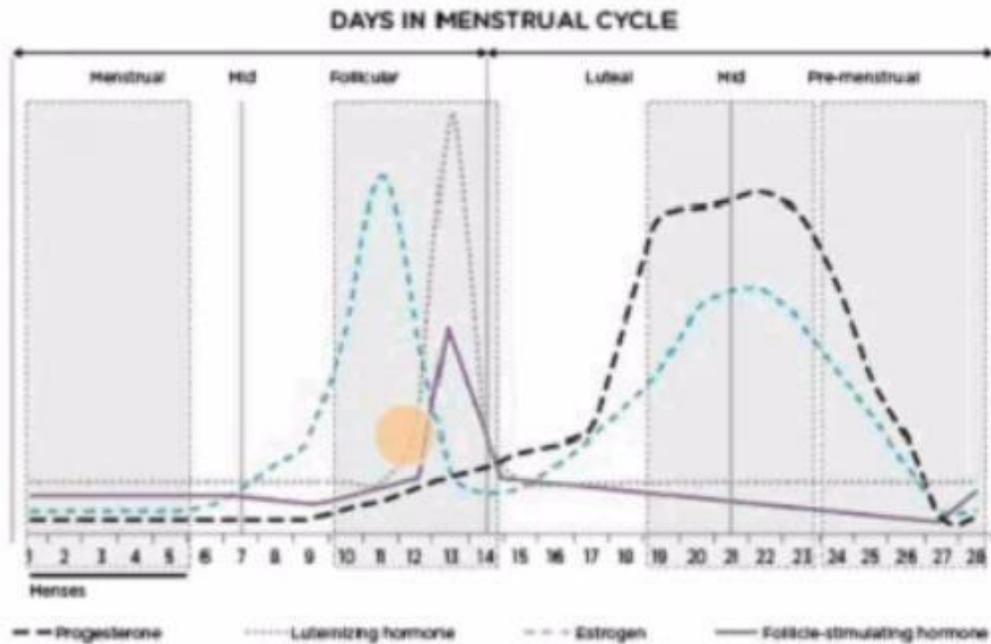
## Question: 8 of 50

Time Remaining: 00:57:01



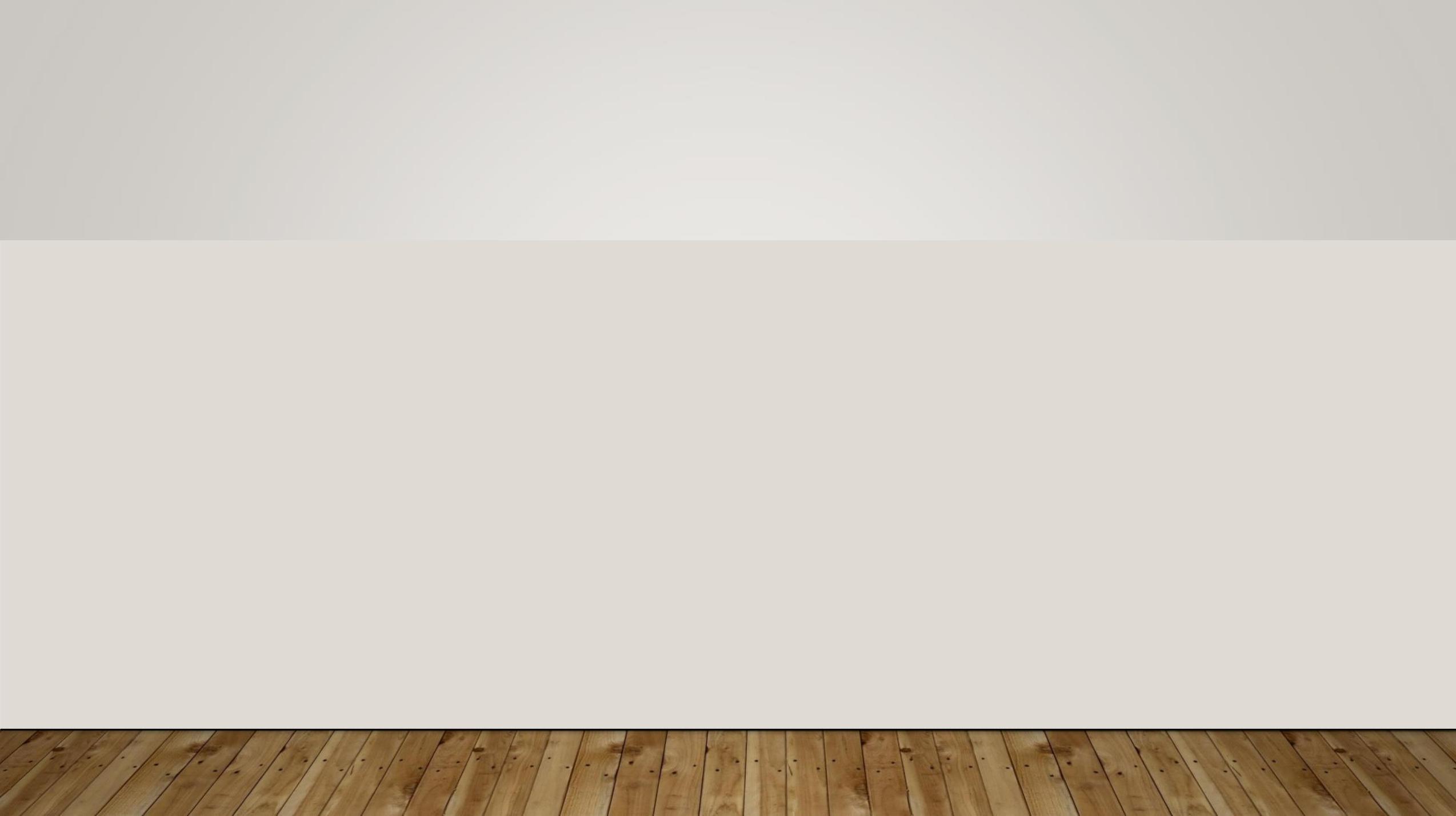
FLAG

During which of the following days in the menstrual cycle is a woman most fertile? (You will find hot spots to select in the artwork below. Select only the hot spot that corresponds to your answer.)



PREVIOUS

CONTINUE



## Question: 9 of 50

Time Remaining: 00:56:37



 FLAG

Which of the following physiological responses is caused by the release of anti-diuretic hormone?



- Decrease in the concentration of calcium in the glomerulus
- Increase in water reabsorption in the collecting duct
- Decrease in water reabsorption in the collecting duct
- Increase in the concentration of calcium in the glomerulus

PREVIOUS

CONTINUE

Question: 10 of 50

Time Remaining: 00:56:18



Which of the following reasons explains why it is important for new scientific findings to be published?



- Other scientists can validate or disprove the findings.
- Scientists will get paid if their findings are published.
- Publishing findings will help scientists become more biased.
- This prevents other scientists from performing similar tests.



Question: 11 of 50

Time Remaining: 00:56:05



Which of the following summarizes a change that takes place as a solid turns to a liquid?



- Particles become less ordered.
- Intermolecular forces between particles become stronger.
- Particles have a decrease in mobility.
- Particles move closer together.

PREVIOUS

CONTINUE

Question: 12 of 50

Time Remaining: 00:55:49



 FLAG

Which of the following is the process in which an ovarian follicle matures and releases a reproductive egg?



Oogenesis

Ovulation

Fertilization

Menstruation



Question: 13 of 50

Time Remaining: 00:55:34



 FLAG

Which of the following indicates the function of sodium bicarbonate released by the pancreas?



- Sodium bicarbonate stimulates the pyloric sphincter.
- Sodium bicarbonate neutralizes the acidity of chyme.
- Sodium bicarbonate is a protease that digests carbohydrates.
- Sodium bicarbonate inhibits peristalsis.

PREVIOUS

CONTINUE

Question: 14 of 50

Time Remaining: 00:55:22



 FLAG

Which of the following is the approximate threshold value for mammalian neurons?



0 mV

-80 mV

-55 mV

+35 mV

PREVIOUS

CONTINUE

Question: 15 of 50

Time Remaining: 00:54:53



 FLAG

A myocardial infarction affects which of the following blood vessels of the heart?



Coronary

Vena cava

Pulmonary

Aorta

PREVIOUS

CONTINUE



Question: 16 of 50

Time Remaining: 00:53:42



FLAG

Which of the following statements best supports the hypothesis that viruses can cause cancer?



- Cancerous and normal cells share genetic sequences.
- Viruses and cancer cells both replicate rapidly.
- Genes that regulate cell division are found in some viruses.
- Cellular DNA has sequences related to viral sequences.

PREVIOUS

CONTINUE

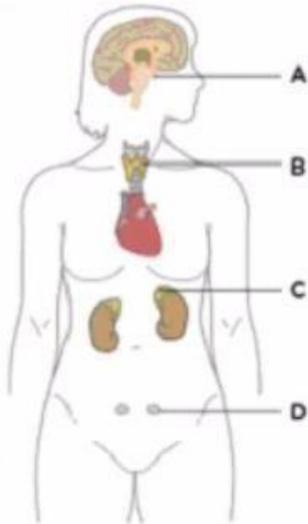
## Question: 17 of 50

Time Remaining: 00:52:39



FLAG

Which of the following endocrine organs in the diagram below is involved in regulating milk production following childbirth?



Pituitary gland

Adrenal glands

Ovaries

Thyroid gland

PREVIOUS

CONTINUE

Question: 18 of 50

Time Remaining: 00:52:29



 FLAG

Which of the following can lead to a tsunami?



- Flooding
- Lightning strikes
- Earthquakes
- Sunspot activity

PREVIOUS

CONTINUE

Question: 19 of 50

Time Remaining: 00:51:57



 FLAG

To separate genomic DNA fragments by size, which of these laboratory methods is most useful?



Electrophoresis

Spectrophotometry

Filtration

Titration

PREVIOUS

CONTINUE

Question: 20 of 50

Time Remaining: 00:50:59



Which of the following is the atomic number of an atom that has 12 protons and 12 neutrons?



144

1

24

12



Question: 21 of 50

Time Remaining: 00:50:48



Nitrogen gas is an extremely stable molecule because its structure contains which of the following?



Resonance bonds

Triple covalent bonds

Hydrogen bonds

Ionic bonds



Question: 23 of 50

Time Remaining: 00:49:39



FLAG

The cytoskeleton of a cell is comprised of which of the following macromolecules?



- Lipids
- Carbohydrates
- Nucleic acids
- Proteins

PREVIOUS

CONTINUE

Question: 24 of 50

Time Remaining: 00:49:26



Lithium has an atomic number of 3 and a mass number of 7. Which of the following is the number of protons in a lithium atom?



3

12

7

4



Which of the following statements describes how the body system in the image can affect the cardiovascular system?



- It aids in lowering CO<sub>2</sub> levels in the blood.
- It aids in raising levels of clotting factors in the blood.
- It aids in lowering oxygen levels in the blood.
- It aids in raising hemoglobin levels in the blood.

← PREVIOUS

CONTINUE →

Question: 26 of 50

Time Remaining: 00:48:31

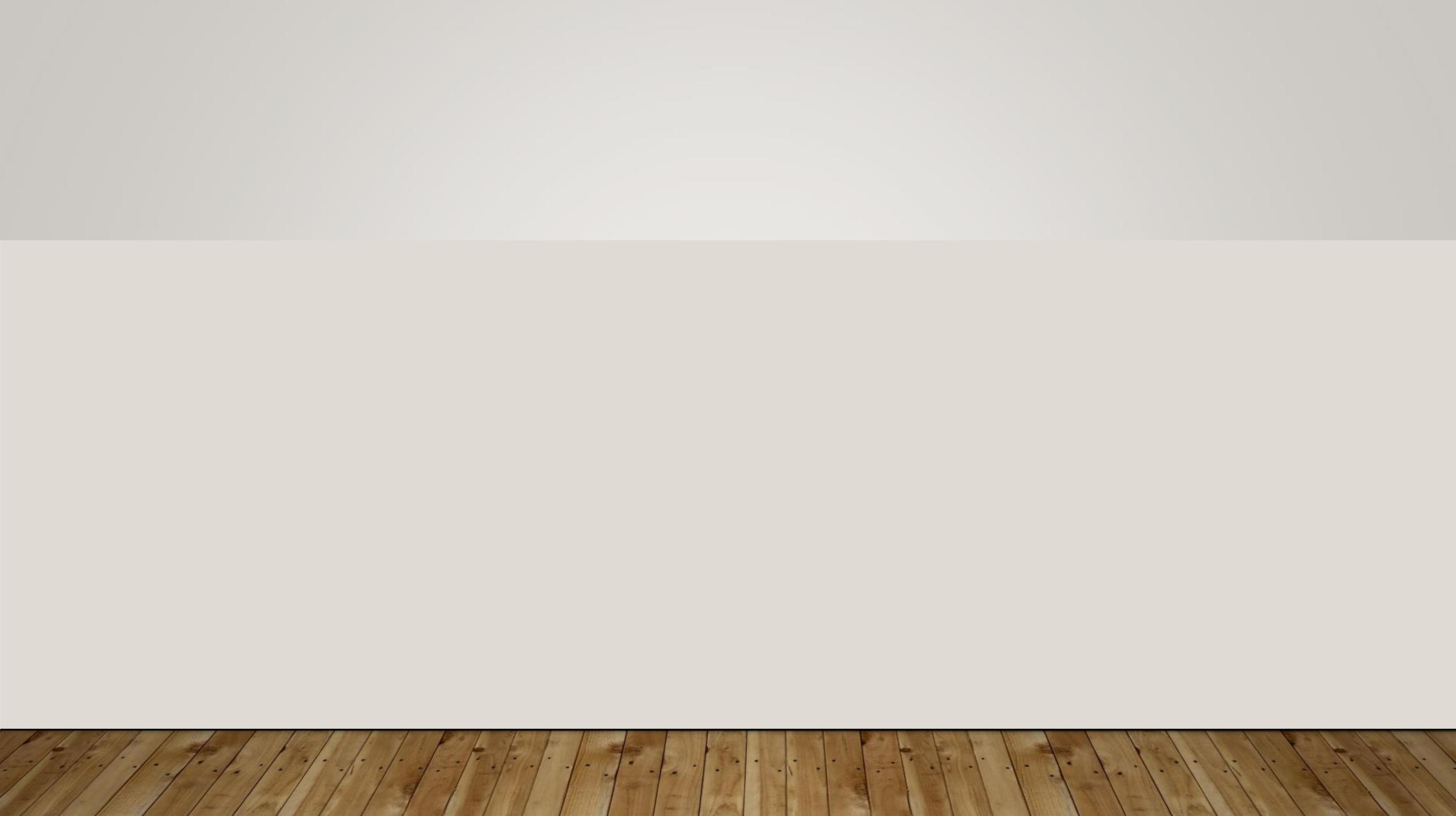


Which of the following properties of water explains its solvent abilities for certain substances?



- High surface tension
- High specific heat
- Kinetic energy of liquid water molecules
- Polarity of water molecules





Question: 27 of 50

Time Remaining: 00:47:42



 FLAG

Which of the following is a mass within the ovary that secretes hormones to maintain the uterine lining during pregnancy?



- Oviduct
- Umbilical cord
- Corpus luteum
- Oocyte

PREVIOUS

CONTINUE

Question: 28 of 50

Time Remaining: 00:47:02



Which of the following is the structure through which blood exits the glomerulus?



- Distal tubule
- Proximal tubule
- Afferent arteriole
- Efferent arteriole

PREVIOUS

CONTINUE

## Question: 29 of 50

Time Remaining: 00:45:45



In the following data table of an experiment carried out at 4° C (39.2° F) over 4 hours, which of the following options represents the dependent variable?

Solution in bag	Solution outside bag	Bag mass change (g)
water	water	-0.2
20% sucrose	water	+2.4
40% sucrose	water	+4.3
60% sucrose	water	+5.8



- Temperature
- Duration
- Sucrose concentrations
- Bag mass change



## Question: 30 of 50

Time Remaining: 00:45:27



 FLAG

Testosterone is categorized as which of the following types of hormones?



Aldosterone

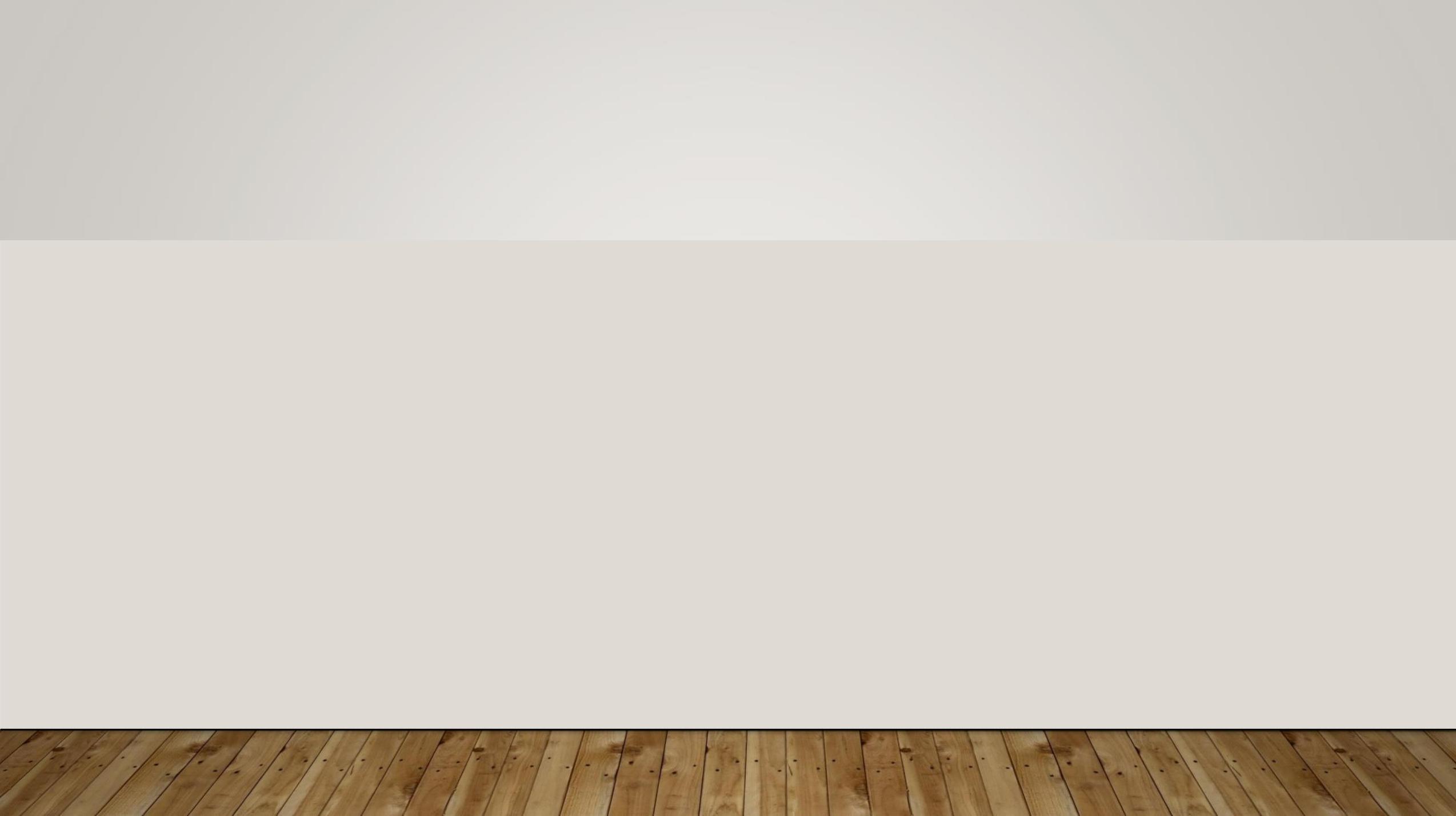
Androgen

Estrogen

Progestin

PREVIOUS

CONTINUE



## Question: 31 of 50

Time Remaining: 00:45:15



 FLAG

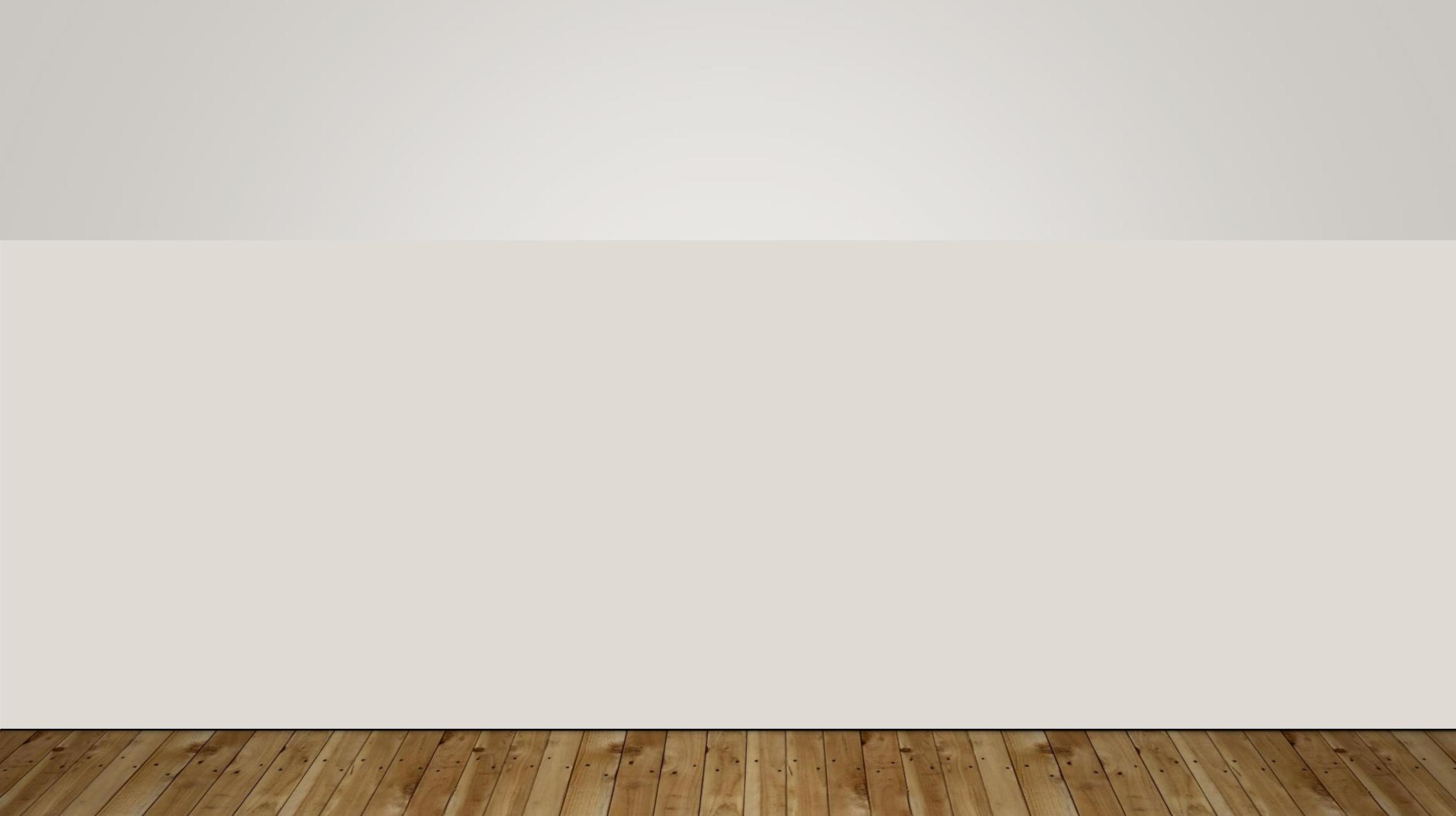
Which of the following best describes the result of using a catalyst in a chemical reaction?



- A greater amount of heat energy is released by the reaction.
- The yield of product is increased.
- The reaction is completed in a shorter amount of time.
- A more desirable product is often formed.

PREVIOUS

CONTINUE



Question: 32 of 50

Time Remaining: 00:44:56



 FLAG

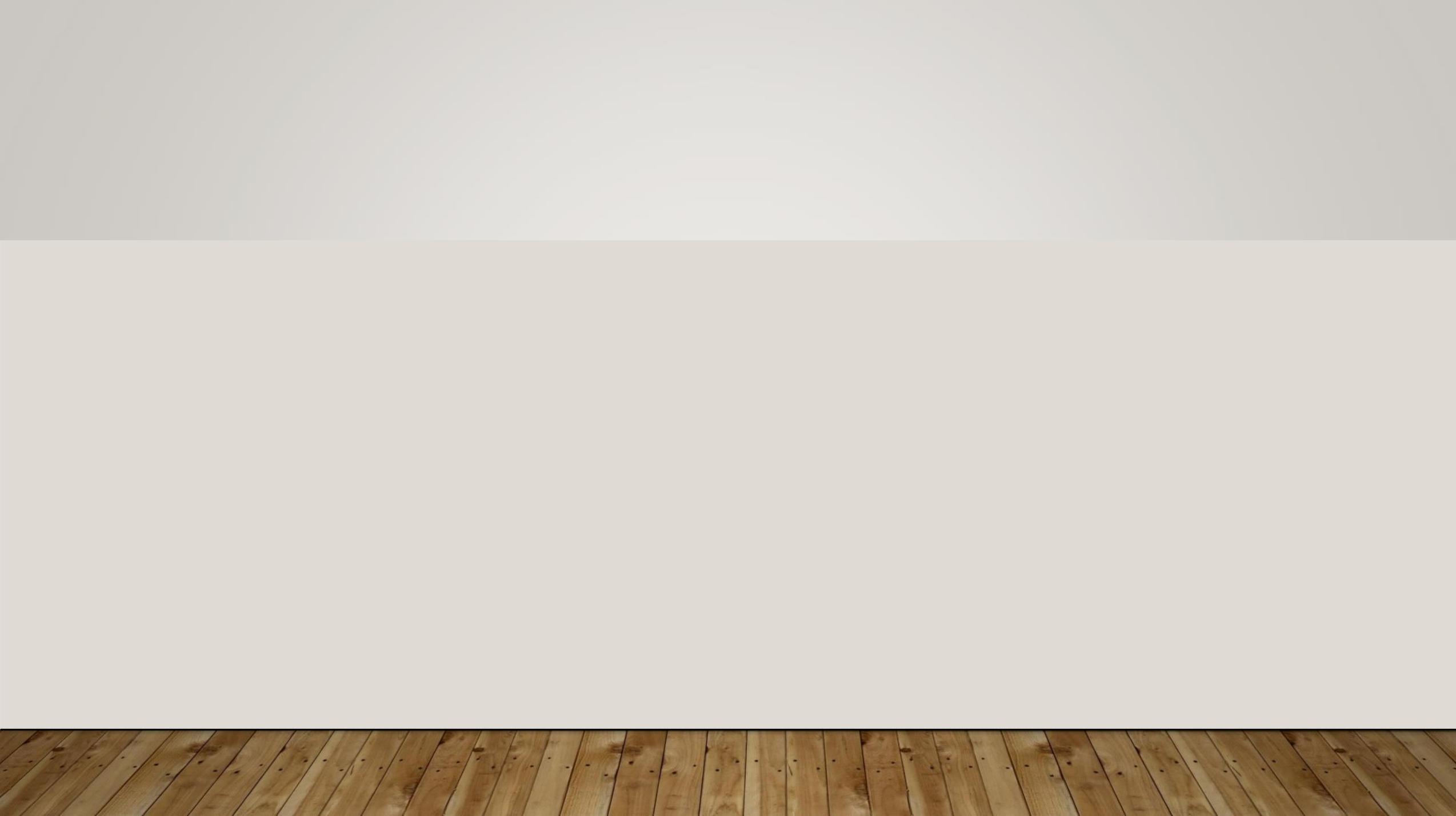
Which of the following types of cells produce and release antibodies?



- Helper T-cells
- Cytotoxic T-cells
- Plasma B cells
- Natural killer cells

← PREVIOUS

CONTINUE →



Question: 33 of 50

Time Remaining: 00:43:48



Which of the following is the main function of centrosomes in animal cells?



Organelle trafficking

Cytoplasm formation

Microtubule organization

Pathogen digestion



Question: 34 of 50

Time Remaining: 00:42:53



Which of the following organic molecules contain both an amine and carboxyl group?



Cellulose

Lipids

Chitin

Proteins



Question: 35 of 50

Time Remaining: 00:41:55



FLAG

Which of the following glands synthesizes antidiuretic hormone?



- Thymus
- Pineal gland
- Hypothalamus
- Pancreas

PREVIOUS

CONTINUE

Question: 36 of 50

Time Remaining: 00:41:15



 FLAG

Which of the following ions binds to the troponin complex, initiating contraction of a muscle?



Calcium

Sodium

Phosphorus

Potassium



## Question: 37 of 50

Time Remaining: 00:40:52



 FLAG

Which of the following microorganisms lack their own metabolic pathways and can only reproduce inside of a host cell?



Bacteria

Viruses

Protozoa

Helminths

PREVIOUS

CONTINUE

Question: 38 of 50

Time Remaining: 00:39:43

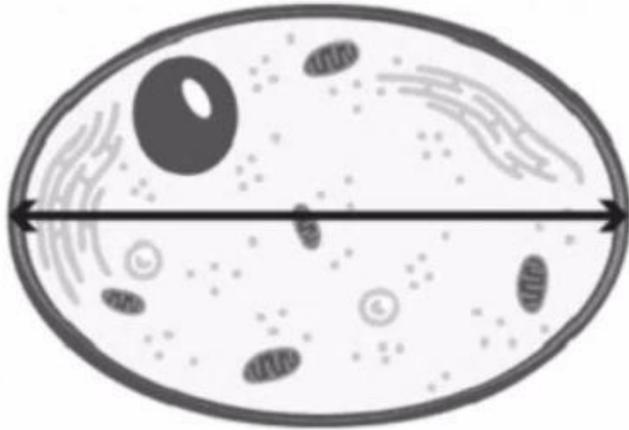


In a hypertonic solution, water flows through aquaporins embedded in the plasma membrane of the cell. This type of transport is best known as which of the following?



- Diffusion
- Osmosis
- Facilitated diffusion
- Active transport





The measurement indicated by the line across the center of the cell is best referred to as which of the following?



Radius

Volume

Area

Diameter

PREVIOUS

CONTINUE

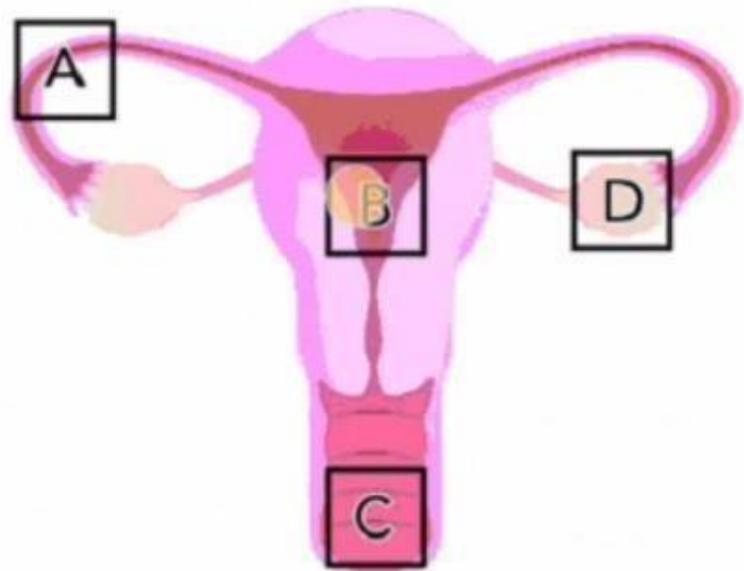
Question: 40 of 50

Time Remaining: 00:38:57



FLAG

Which structure of the female reproductive system is the source of the blood and mucosal tissue during menstruation? (You will find hot spots to select in the artwork below. Select only the hot spot that corresponds to your answer.)



PREVIOUS

CONTINUE

## Question: 41 of 50

Time Remaining: 00:38:30



 FLAG

In a plant in which fuzzy leaves (F) are dominant over smooth leaves (f), which of the following crosses will produce only offspring with smooth leaves?



Ff x Ff

FF x FF

ff x ff

Ff x ff

PREVIOUS

CONTINUE

Question: 42 of 50

Time Remaining: 00:37:31



 FLAG

Which of the following chemicals is released by one type of immune cell to directly activate another type of immune cell?



Perforin

Lysozymes

Granzymes

Cytokines

PREVIOUS

CONTINUE

Question: 43 of 50

Time Remaining: 00:36:52



 FLAG

Osteoporosis results from which of the following?



- A decline in osteoclast activity while osteoblast activity continues at expected levels
- A decline in osteoblast activity while osteoclast activity continues at expected levels
- An increase in osteocyte activity while osteoclast activity continues at expected levels
- An increase in osteocyte activity while osteoblast activity continues at expected levels

PREVIOUS

CONTINUE

## Question: 44 of 50

Time Remaining: 00:36:35



 FLAG

Hikers who found a human body at high altitude in the Italian Alps thought the man had died recently, but tests indicated he was shot with an arrow more than 5,300 years ago. Which of the following would be the best reason for prolonged preservation of the body?



- The ultraviolet rays at such a high altitude caused all the body's molecules to be preserved.
- The arrow wound caused blood to flow out of the body, which led the enzymes that would break down tissue to be cleared from the body.
- The food that the person ate contained toxins that killed the bacteria that would have otherwise destroyed the body.
- The body was frozen in the cold temperature of the Alps shortly after he died and remained frozen until it was found.

PREVIOUS

CONTINUE

Question: 45 of 50

Time Remaining: 00:36:20



Which of the following is a group that can be measured against the experimental group?



Manipulated

Control

Variable

Responding





FLAG

In which of the following images are the pulmonary veins correctly highlighted?





Question: 47 of 50

Time Remaining: 00:34:57



FLAG

Which of the following vessels carries oxygenated blood?



- Pulmonary vein
- Inferior vena cava
- Pulmonary artery
- Superior vena cava

PREVIOUS

CONTINUE



Question: 48 of 50

Time Remaining: 00:34:27



FLAG

Which of the following is the function of a totipotent cell?



Develops into any kind of cell

Fights infectious diseases

Aids in the maturation of sex cells

Carries electrical impulses

PREVIOUS

CONTINUE



**Question: 49 of 50**

Time Remaining: 00:34:16



 FLAG

Which of the following are used to determine a person's DNA sequence?



Hormones

Enzymes

Blood types

Genes

PREVIOUS

CONTINUE

## Question: 50 of 50

Time Remaining: 00:33:42



FLAG

# OF FILTERS	MASS (g)	TERMINAL VELOCITY (m/s)
1	1.01	1.74
2	1.99	2.48
3	3.02	3.04
4	4.0	3.50
5	5.01	3.80

Stimulus: 1 of 1

A group of students perform an experiment to test terminal velocity, which is the greatest speed obtained by a falling object. The students dropped different numbers of coffee filters and measured the resulting terminal velocity. Which of the following conclusions is supported by the data in the following data table?



- Terminal velocity is when the force of gravity is equal to air resistance.
- Heavier objects fall faster than lighter objects.
- The greater the number of filters, the smaller the terminal velocity.
- Heavier objects take more time to reach terminal velocity.

PREVIOUS

CONTINUE