

UIL SCIENCE TESTS

BIOLOGY

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UIL Science Practice Packet author, Kenneth Davis, earned his B.S. from Texas A&M University and an M.S. in microbiology from The University of Texas Health Science Center. A science teacher for over 24 years, Davis is currently teaching Medical Microbiology at Austin Community College and Science at Harper High School. He has coached numerous UIL Science teams, winning District and Regional championships, as well as achieving success at the State level.

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~ President Hexco Inc., Linda Tarrant

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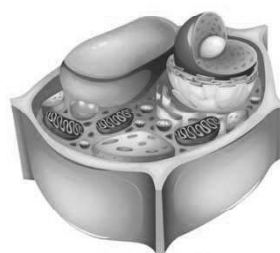
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UIL SCIENCE TESTS – BIOLOGY



animal cell



plant cell

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- 1. 5 Sets of 100 Questions**
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For official UIL Constitution and Contest Rules for Science,
please review the Section 952 document at:

<http://www.uiltexas.org/academics/science>

119. This particular enzyme is produced by the thyroid gland in humans and is responsible for lowering blood calcium levels.
- thyroxine
 - insulin
 - lutenizing hormone
 - calcitonin
 - carboxylase
120. The portion of the forebrain in humans that controls homeostasis throughout the body and regulates the pituitary gland is the ____ .
- cerebrum
 - cerebellum
 - pons
 - hypothalamus
 - thalamus
121. Which of the following genotypes is considered to be completely heterozygous?
- FFGG
 - FfGg
 - Ffgg
 - ffgg
 - FFGg
122. DNA could be found in the following structure(s)?
- ribosomes
 - nucleus
 - mitochondria
 - chloroplasts
 - chromosomes
- I, II, IV
 - I, III, V
 - II, III, IV, V
 - II, III, V
 - I, II, III, IV,
123. The building block of proteins is the ____ .
- nucleic acid
 - amine group
 - carbohydrate
 - carboxyl group
 - none of the above
124. The *nucleotides* that are considered to be *pyrimidines* are ____ .
- adenine, guanine, and uracil
 - cytosine and thymine
 - adenine, uracil, and cytosine
 - cytosine, thymine, and uracil
 - adenine and guanine
125. The ____ structure of a protein will ultimately determine the protein's shape.
- primary
 - secondary
 - tertiary
 - quaternary
 - all of the above
126. The ____ are found in animal cells and are comprised of microtubules.
- peroxisomes
 - vacuoles
 - ribosomes
 - centrioles
 - mitochondria
127. The major difference between *pinocytosis* and *phagocytosis* is ____ .
- Pinocytosis is a form of endocytosis, and phagocytosis is a form of exocytosis.
 - Pinocytosis is the taking into a cell of larger particles. Phagocytosis is the taking into a cell of water.
 - Pinocytosis is a form of active transport. Phagocytosis is a form of passive transport.
 - Pinocytosis involves the intake of liquid molecules. Phagocytosis is the engulfing of larger molecules by a host cell.
 - Both A and D are correct.

209. Put the following in order from oldest to youngest.
- oldest prokaryotic fossils
 - angiosperms
 - oldest eukaryotic fossils
 - primates
 - gymnosperms
- II, III, I, V, IV
 - III, I, V, II, IV
 - III, I, II, V, IV
 - I, II, III, V, IV
 - I, III, V, II, IV
210. A/n ____ is an organism that is able to derive its energy from the sun and its carbon source organic carbon.
- chemoautotroph
 - chemoheterotroph
 - photoheterotroph
 - photoautotroph
 - facultative anaerobe
211. The danger of bacteria such as *Bacillus anthracis* is that ____.
- it is capable of staying in the vegetative state for prolonged periods of time
 - it can live in a high salt content media
 - it is a spore forming bacillus which increases its ability to withstand harsh growing conditions
 - it is a strict aerobe with many virulence factors
 - it produces an exotoxin known as bo-tox to protect it
212. The terminal electron acceptor in the TCA or Kreb's cycle is ____ which after it is ____ forms ____.
- NAD⁺, reduced, NADH
 - NADP⁺, oxidized, NADPH
 - ADP, photophosphorylated, ATP
 - oxygen, reduced, water
 - pyruvate, reduced, carbon dioxide
213. In photosynthesis, where does the plant get more electrons to replace those that have been carried to the electron transport chain from Photosystem I?
- from NADPH
 - from NADP⁺
 - from carbon dioxide brought into the plant through the stoma
 - from oxygen gas released by photosynthesis
 - from water that is absorbed via plant roots
214. The tracheids and vessel elements are important to vascular plants because ____.
- they both are involved in the reproduction of complex plants
 - they both reduce extracellular water use
 - they produce and transport proteins
 - they are responsible for stem girth increase
 - None of the above is correct.
215. The Darwinian Finches in the Galapagos Islands have a variety of different types of bills specialized for procuring many different types of food. This type of evolution where many species have developed over time from a common ancestor is also known as ____.
- adaptive radiation
 - allotropic speciation
 - allopatric speciation
 - sympatric speciation
 - introgression
216. Many species of organism can be classified according to their metabolic pathways. Organisms that cannot use oxygen as a terminal electron acceptor in catabolizing sugars are known as ____.
- obligate aerobes
 - obligate anaerobes
 - facultative aerobes
 - facultative anaerobes
 - microaerophilic

359. Due to the ____ sex cells receive one of the two genes for each trait from the parent during meiosis. This random selection process increases genetic diversity with organisms that reproduce sexually.
- Law of Independent Assortment
 - Law of Segregation
 - Law of Haploid Cell Formation
 - Law of Sexual Reproduction
 - Law of Multiple Combination
360. When studying the interaction between one species and another in ecology, we concentrate on the organisms ____ to get a better understanding on how they interact.
- biosphere
 - trophic level
 - biome
 - community
 - population
361. Carbon serves as a major building block in living organisms here on Earth because of which of the following reasons.
- There are four bonding sites on a carbon atom.
 - Carbon has the ability to form chains and rings with other carbon atoms.
 - It is abundant here on Earth.
 - It forms strong ionic bonds with other atoms.
 - Its ability to form radioactive isotopes is essential to life here on Earth.
- I, II, III
 - I, II, V
 - I, II
 - I, III, V
 - I, II, III, IV
362. DNA's ability to replicate in a semi-conservative nature means that ____.
- only genes that are needed are replicated, saving valuable energy
 - only one strand of the DNA, the coding strand, is replicated, saving resources
 - each strand from the original DNA strand serves as a template for the newly replicated strands
 - only introns, not exons from the original DNA strand are replicated, saving valuable resources
 - only exons, not introns from the original DNA strand are replicated
363. Amino acids are comprised of what three things?
- nucleic acids, carboxyl groups, variable group
 - amine group, carboxyl group, variable group
 - amine group, fatty acid, carboxyl group
 - amine group, phosphate group, carboxyl group
 - amine group, nitrogen base, carboxyl group
364. Cells in the human body that serve to remove foreign particles/invasers by way of phagocytosis are known as ____.
- endothelial cells
 - fibroblast cells
 - macrophage cells
 - tumor necrosis factor cells
 - erythrocytes
365. The function of plasmodesmata cells in plants is to ____.
- receive nerve impulses from individual cells that allow for communication.
 - allow for movement of material into and out of cells
 - regulate movement of water between individual cells
 - transfer proteins from cell to cell
 - None of the above is a function of plasmodesmata because they are only found in animal cells, not plant cells.