Puzzle # 1 of 10: Match definitions on the right with their corresponding word on the left.

Word Bank 1. Multicellular 2. Chromosomes 3. Organ System 4. Abiogenesis 5. Lactic Acid 6. Plastid 7. Cell 8. Taxonomy 9. Artificial Selection 10. Develop 11. Endothermic Reaction 12. Reproduction 13. Fitness 14. Growth

Definition List

- (A) a hypothetical organic phenomenon by which living organisms are created from nonliving matter.
- (B) selection by humans for breeding of useful traits from the natural variation among different organisms.
- (C) the basic structural and functional unit of all organisms.
- (D) thread like structures that have genetic info that is passed down from one generation to the next.
- (E) come to have or undergo a change of (physical features and attributes).
- (F) a chemical reaction accompanied by the absorption of heat.
- (G) ability of an organism to survive and reproduce in its environment.
- (H) (biology) the process of an individual organism growing organically.
- (I) Produced in muscle cells from the reduction of pyruvate (under anaerobic conditions) to regenerate NAD+ so that glycolysis can continue.
- (J) consisting of many cells.
- (K) group of organs that work together to perform a specific function.
- (L) any of various small particles in the cytoplasm of the cells of plants and some animals containing pigments or starch or oil or protein.
- (M) The process by which organisms make more of their own kind from one generation to the next.
- (N) study of the general principles of scientific classification.

(Self-Check. Don't Peek!)

1:J 2:D 3:K 4:A 5:I 6:L 7:C 8:N 9:B 10:E 11:F 12:M 13:G 14:H

Puzzle # 2 of 10: Match definitions on the right with their corresponding word on the left.

14. Tissue

Definition List

- (A) any of various water-soluble compounds having a sour taste and capable of turning litmus red and reacting with a base to form a salt.
- (B) (physics and chemistry) the smallest component of an element having the chemical properties of the element.
- (C) Cells >> Tissue >> organs >> organ systems >> organisms.
- (D) free movement or passage through a series of vessels (as of water through pipes or sap through a plant).
- (E) process by which molecules tend to move from an area where they are more concentrated to an area where they are less concentrated.
- (F) any of several complex proteins that are produced by cells and act as catalysts in specific biochemical reactions.
- (G) the remains (or an impression) of a plant or animal that existed in a past geological age and that has been excavated from the soil.
- (H) the biological process whereby genetic factors are transmitted from one generation to the next.
- (I) Swedish botanist who proposed the modern system of biological nomenclature (1707-1778).
- (J) agents, such as chemicals or radiation that damage or alter genetic material (DNA) in cells.
- (K) specialized structure that performs important cellular functions within a eukaryotic cell.
- a chemical substance formed as a result of a chemical reaction.
- (M) the metabolic processes whereby certain organisms obtain energy from organic molecules.
- (N) a part of an organism consisting of an aggregate of cells having a similar structure and function.

(Self-Check. Don't Peek!)

1:L 2:C 3:A 4:G 5:K 6:F 7:J 8:B 9:D 10:E 11:M 12:H 13:I 14:N

Puzzle # 3 of 10: Match definitions on the right with their corresponding word on the left.

Word Bank 1. Activation Energy 2. Heterotrophy 3. Lipid 4. Osmosis 5. Ribosome 6. Cell Membrane 7. Classification 8. Digestion 9. Gene Expression 10. Mutation 11. Transcription 12. ATP 13. Prokaryote 14. Equilibrium

Definition List

- (A) the energy that an atomic system must acquire before a process (such as an emission or reaction) can occur.
- (B) (adenosine triphosphate) main energy source that cells use for most of their work.
- (C) thin, flexible barrier around a cell, regulates what enters and leaves the cell.
- (D) The division of organisms into groups, or classes, based on specific characteristics.
- (E) the organic process by which food is converted into substances that can be absorbed into the body.
- (F) a chemical reaction and its reverse proceed at equal rates.
- (G) conversion of the information encoded in a gene first into messenger RNA and then to a protein.
- (H) organisms that cannot make their own food and must feed on other organisms for energy and nutrients.
- (I) macromolecule made mainly from carbon and hydrogen atoms; includes fats, oils, and waxes.
- (J) (biology) an organism that has characteristics resulting from chromosomal alteration.
- (K) diffusion of molecules through a semi permeable membrane from a place of higher concentration to a place of lower concentration until the concentration on both sides is equal.
- (L) a unicellular organism having cells lacking membrane-bound nuclei.
- (M) an organelle in the cytoplasm of a living cell, small particle in the cell on which proteins are assembled; made of RNA and protein.
- (N) (genetics) the organic process whereby the DNA sequence in a gene is copied into mRNA.

(Self-Check. Don't Peek!)

1:A 2:H 3:I 4:K 5:M 6:C 7:D 8:E 9:G 10:J 11:N 12:B 13:L 14:F

Puzzle # 4 of 10: Match definitions on the right with their corresponding word on the left.

| 1. Autosomes | 2. Dihybrid | 3. Homeostasis | 4. Protein | 5. Transgenic | 6. Cell Wall | 7. Lysosome | 8. Cloning | 9. RNA | 10. Ethyl Alcohol | 11. Gene Regulation | 12. Natural Selection | 13. Passive Transport | 14. Active Site

Definition List

- (A) The specific portion of an enzyme that attaches to the substrate by means of weak chemical bonds.
- (B) chromosomes that are not directly involved in determining the sex of an individual.
- (C) a thin membrane around the cytoplasm of a cell.
- (D) a general term for the research activity that creates a copy of some biological entity (a gene or organism or cell).
- (E) An organism that is heterozygous with respect to two genes of interest.
- (F) nonflavored alcohol of 95 percent (190 proof) used for blending with whiskies and in making liqueurs.
- (G) regulation of transcription; controlled by an operon which varies the accessibility of the RNA polymerase to genes being transcribed.
- (H) metabolic equilibrium actively maintained by several complex biological mechanisms that operate *via* the autonomic nervous system to offset disrupting changes.
- (I) an organelle found in the cytoplasm of most cells (especially in leukocytes, liver and kidney cells).
- (J) process by which individuals that are better suited to their environment survive and reproduce most successfully; also called survival of the fittest.
- (K) the movement of substances across a cell membrane without the use of energy by the cell.
- (L) macromolecule that contains carbon, hydrogen, oxygen, and nitrogen.
- (M) a long linear polymer of nucleotides found in the nucleus but mainly in the cytoplasm of a cell.
- (N) organism whose genome has been altered to contain one or more genes from another organism or species.

(Self-Check. Don't Peek!)

1:B 2:E 3:H 4:L 5:N 6:C 7:I 8:D 9:M 10:F 11:G 12:J 13:K 14:A

Puzzle # 5 of 10: Match definitions on the right with their corresponding word on the left.

Word Bank 1. Genetic Code 2. Pastuer 3. Diploid 4. Meiosis 5. Nucleic Acid 6. RRNA 7. Cellular Respiration 8. Coevolution 9. Translation 10. Autotroph 11. Active Transport 12. Punnett Square 13. Eukaryote 14. Homologous

Definition List

- (A) transport of a substance across a cell membrane against the concentration gradient.
- (B) organism that can capture energy from sunlight or chemicals and use it to produce its own food from inorganic compounds; also called a producer.
- (C) the metabolic processes whereby certain organisms obtain energy from organic molecules.
- (D) the process in which species exert selective pressure on each other and gradually evolve new features or behaviors as a result of those pressures.
- (E) (genetics) an organism or cell having two sets of chromosomes or twice the haploid number.
- (F) an organism with cells characteristic of all life forms except primitive microorganisms such as bacteria.
- (G) the rule that describes how a sequence of nucleotides, read in groups of three consecutive nucleotides (triplets) that correspond to specific amino acids, specifies the amino acid sequence of a protein.
- (H) corresponding or similar in position or structure or function or characteristics.
- (I) (genetics) cell division that produces reproductive cells in sexually reproducing organisms.
- (J) an organic compound, either RNA or DNA, whose molecules are made up of one or two chains of nucleotides and carry genetic information.
- (K) the scientist that finally disproved spontaneous generation.
- (L) a chart that shows all the possible combinations of alleles that can result from a genetic cross.
- (M) ribosomal RNA; type of RNA that makes up part of the ribosome.
- (N) (genetics) the process whereby genetic information coded in messenger RNA directs the formation of a specific protein at a ribosome in the cytoplasm.

(Self-Check. Don't Peek!)

1:G 2:K 3:E 4:I 5:J 6:M 7:C 8:D 9:N 10:B 11:A 12:L 13:F 14:F

Puzzle # 6 of 10: Match definitions on the right with their corresponding word on the left.

14. Metabolism

Definition List

- (A) a legal proceeding that creates a parent-child relation between persons not related by blood.
- (B) any of various water-soluble compounds capable of turning litmus blue and reacting with an acid to form a salt and water.
- (C) English naturalist. He studied the plants and animals of South America and the Pacific islands.
- (D) genetic disorder in which people are blind to green or red.
- (E) the material that contains the information that determines inherited characteristics.
- (F) (biology) the sequence of events involved in the evolutionary development of a species or taxonomic group of organisms.
- (G) the technology of preparing recombinant DNA in vitro by cutting up DNA molecules and splicing together fragments from more than one organism.
- (H) An international collaborative effort to map and sequence the DNA of the entire human genome.
- (I) the organic processes (in a cell or organism) that are necessary for life.
- (J) monomer of nucleic acids made up of a 5-carbon sugar, a phosphate group, and a nitrogenous base.
- (K) a diagram that shows the occurrence of a genetic trait in several generations of a family.
- (L) a chemical substance that is present at the start of a chemical reaction.
- (M) characteristic of a cell membrane which allows some molecules to pass through but not others.
- (N) short-chain RNA molecules present in the cell that attach the correct amino acid to the protein chain that is being synthesized at the ribosome of the cell.

(Self-Check. Don't Peek!)

1:H 2:J 3:K 4:C 5:M 6:D 7:E 8:G 9:L 10:N 11:A 12:F 13:B 14:I

Puzzle # 7 of 10: Match definitions on the right with their corresponding word on the left.

Word Bank Definition List 1. Unicellular (A) process that requires oxygen. 2. Hydrogen Bonds (B) the production of living organisms from other 3. Charles Drew living organisms. 4. Species (C) an African American doctor who successful ____ 5. Aerobic separated blood plasma which later was used in 6. Biogenesis creating blood banks. ____ 7. Mitochondria 8. Concentration Gradient (D) a difference in the concentration of a substance 9. Recombinant DNA across a distance. ____ 10. DNA Replication (E) process by which DNA is copied in a cell before a 11. Excretion cell divides by mitosis, meiosis, or binary fission. 12. pH (F) the process by which wastes are removed from the 13. Genus 14. Nucleus (G) (biology) taxonomic group containing one or more species. (H) attractive forces in which a hydrogen covalently bonded to a very electronegative atom is also weakly bonded to an unshared electron pair of another electronegative atom. powerhouse of the cell, produces energy (ATP) from oxygen and sugar (Cellular respiration). a part of the cell containing DNA and RNA and responsible for growth and reproduction. (K) **p**otential of **H**ydrogen, a value that indicated the acidity or alkalinity of a solution on a scale of 0-14, based on the proportion of H+ ions. (L) genetically engineered DNA made by recombining fragments of DNA from different organisms. (M) (biology) taxonomic group whose members can interbreed. (N) having or consisting of a single cell. (Self-Check. Don't Peek!)

1:N 2:H 3:C 4:M 5:A 6:B 7:I 8:D 9:L 10:E 11:F 12:K 13:G

Puzzle #8 of 10: Match definitions on the right with their corresponding word on the left.

Word Bank 1. Red 1 2. Biotechnology 3. Amino Acid 4. Glycolysis 5. Hypertonic 6. Mitosis 7. Photosynthesis 8. Stem Cell 9. Vacuole 10. Down Syndrome 11. Covalent 12. Chemical Reaction 13. Exothermic Reaction 14. Nutrition

Definition List

- (A) monomer that makes up proteins; contains carboxyl and amino functional groups.
- (B) the branch of molecular biology that studies the use of microorganisms to perform specific industrial processes.
- (C) (chemistry) a process in which one or more substances are changed into others.
- (D) A compound where atoms are shared.
- (E) A human genetic disease resulting from having an extra chromosome 21.
- (F) a chemical reaction accompanied by the evolution of heat.
- (G) a metabolic process that breaks down carbohydrates and sugars and release energy for the body in the form of ATP.
- (H) (of a solution) having a higher osmotic pressure than a comparison solution.
- in eukaryotic cells, a process of cell division that forms two new nuclei, each of which has the same number of chromosomes.
- (J) (physiology) the organic process of nourishing or being nourished.
- (K) process by which plants use light energy to convert water and carbon dioxide into oxygen and highenergy carbohydrates such as sugars and starches.
- (L) an expression used in relation to hydrogen in nuclear reactions.
- (M) an undifferentiated cell whose daughter cells may differentiate into other cell types (such as blood cells).
- (N) a tiny cavity filled with fluid in the cytoplasm of a cell.

(Self-Check. Don't Peek!)

1:L 2:B 3:A 4:G 5:H 6:I 7:K 8:M 9:N 10:E 11:D 12:C 13:F 14:J

Puzzle # 9 of 10: Match definitions on the right with their corresponding word on the left.

| 1. Vestigial | | 2. Buffer | 3. Anaerobic | 4. Cytokinesis | 5. Hypotonic | 6. Monohybrid | 7. Chlorophyll | 8. Element | 9. Operons | 10. Phylogeny | 11. Extinction | 12. Regulation | 13. Substrate | 14. Golgi Apparatus

Definition List

- (A) metabolic process that does not require oxygen.
- (B) an implement consisting of soft material mounted on a block, weak acid or base that can react with strong acids or bases to help prevent sharp, sudden changes in pH.
- (C) green pigment in plants that absorbs light energy used to carry out photosynthesis.
- (D) The final stage of the cell cycle, in which the cell's cytoplasm divides, distributing the organelles into each of the two new cells.
- (E) a pure substance made of only one kind of atom.
- (F) a conditioning process in which the reinforcer is removed and a conditioned response becomes independent of the conditioned stimulus.
- (G) a net-like structure in the cytoplasm of animal cells (especially in those cells that produce secretions).
- (H) (of a solution) having a lower osmotic pressure than a comparison solution.
- (I) a hybrid produced by crossing parents that are homozygous except for a single gene locus that has two alleles (as in Mendel's experiments with garden peas).
- (J) in prokaryotes, a set of genes, often encoding the proteins needed for a complete metabolic pathway.
- (K) (biology) the sequence of events involved in the evolutionary development of a species or taxonomic group of organisms.
- (L) (embryology) the ability of an early embryo to continue normal development after its structure has been somehow damaged or altered.
- (M) reactant of an enzyme-catalyzed reaction.
- (N) not fully developed in mature animals.

(Self-Check. Don't Peek!)

1:N 2:B 3:A 4:D 5:H 6:I 7:C 8:E 9:J 10:K 11:F 12:L 13:M 14:G

Puzzle # 10 of 10: Match definitions on the right with their corresponding word on the left.

Word Bank 1. Organ 2. Gregory Mendel 3. Isotonic 4. Plasmid 5. Synthesis 6. Aristotle 7. MRNA 8. Relative Dating 9. Facilitated Diffusion 10. Chloroplast 11. Cytoplasm 12. Carbohydrate 13. Honeycutt 14. Endoplasmic Reticulum

Definition List

- (A) Greek philosopher. A pupil of Plato, the tutor of Alexander the Great, and the author of works on logic, metaphysics, ethics, natural sciences.
- (B) compound made up of carbon, hydrogen, and oxygen atoms; major source of energy for the human body.
- (C) plastid containing chlorophyll and other pigments.
- (D) a jellylike fluid inside the cell in which the organelles are suspended.
- (E) a cell structure that forms a maze of passageways in which proteins and other materials are carried from one part of the cell to another.
- (F) movement of specific molecules across cell membranes through protein channels.
- (G) established the patterns of heredity.
- (H) a high school science instructor in Keota, OK
- (I) (used of solutions) having the same or equal osmotic pressure.
- (J) messenger RNA; type of RNA that carries instructions from DNA in the nucleus to the ribosome.
- (K) a fully differentiated structural and functional unit in an animal that is specialized for some particular function.
- (L) a small cellular inclusion consisting of a ring of DNA that is not in a chromosome but is capable of autonomous replication.
- (M) method of determining the age of a fossil by comparing its placement with that of fossils in other layers of rock.
- (N) the process of producing a chemical compound (usually by the union of simpler chemical compounds).

(Self-Check. Don't Peek!)

1:K 2:G 3:I 4:L 5:N 6:A 7:J 8:M 9:F 10:C 11:D 12:B 13:H 14:E