RELATED GLOSSARY TERM DEFINITIONS (64) – Biology I

Abiotic: An environmental factor not associated with or derived from living organisms.

Activation energy: The least amount of energy required to start a particular chemical reaction.

Adenosine triphosphate (ATP): An organic compound that is composed of adenosine and three phosphate groups. It serves as a source of energy for many metabolic processes. ATP releases energy when it is broken down into ADP and phosphate by hydrolysis during cell metabolism.

Aerobic: Occurring in the presence of oxygen or requiring oxygen to live. In aerobic respiration, which is the process used by the cells of most organisms, the production of energy from glucose metabolism requires the presence of oxygen.

Anaerobic : Occurring in the absence of oxygen or not requiring oxygen to live. Anaerobic bacteria produce energy from food molecules without the presence of oxygen.

Anatomy: The scientific study of the shape and structure of organisms and their parts.

Aquatic: In or on the water

Asexual reproduction: A form of reproduction in which new individuals are formed without the involvement of gametes.

Biotechnology: The manipulation (as through genetic engineering) of living organisms or their components to produce useful usually commercial products (as pest resistant crops, new bacterial strains, or novel pharmaceuticals).

Biotic: Factors in an environment relating to, caused by, or produced by living organisms.

Cardiovascular system: The bodily system consisting of the heart, blood vessels, and blood that circulates blood throughout the body, delivers nutrients and other essential materials to cells, and removes waste products.

Catalyst: A substance that speeds up or slows down the rate of a reaction without being consumed or altered.

Cell: The smallest structural unit of an organism that is capable of independent functioning, consisting of cytoplasm and various organelles, all surrounded by a semipermeable cell membrane, which in some cells, is surrounded by a cell wall

Chromosome: A structure in living cells that consists of a single molecule of DNA bonded to various proteins and that carries the genes determining heredity.

Codominant: Relating to two alleles of a gene pair in a heterozygote that are both fully expressed.

Consumer: An organism that feeds on other organisms for food.

Current : The amount of electric charge flowing past a specified circuit point per unit time.

Decomposer : Any organism that feeds or obtains nutrients by breaking down organic matter from dead organisms.

DNA: Deoxyribonucleic acid; a nucleic acid that is genetic material; present in all organisms.

Dominance: Tendency of certain (dominant) alleles to mask the expression of their corresponding (recessive) alleles.

Embryology: The branch of biology that deals with the formation, early growth, and development of living organisms.

Energy: The capacity to do work.

Environment: The sum of conditions affecting an organism, including all living and nonliving things in an area, such as plants, animals, water, soil, weather, landforms, and air.

Enzyme: Any of numerous proteins produced in living cells that accelerate or catalyze chemical reactions.

Evolution : A theory that the various types of species arise from pre-existing species and that distinguishable characteristics are due to modifications through successive generations.

Fertilization: The act or process of initiating biological reproduction by insemination or pollination.

Fossil: A whole or part of an organism that has been preserved in sedimentary rock.

Freeze: To pass from the liquid to the solid state by loss of heat from the substance/system.

Gamete: A reproductive cell having the haploid number of chromosomes, especially a mature sperm or egg capable of fusing with a gamete of the opposite sex to produce the fertilized egg.

Genetic: Affecting or determined by genes.

Haploid: Having a single set of each chromosome in a cell or cell nucleus. In most animals, only the gametes (reproductive cells) are haploid.

Hominid: A group of primates of the family Hominidae, which includes modern humans.

Hypothesis : A tentative explanation for an observation, phenomenon, or scientific problem that can be tested by further investigation.

Immune system: The body system that protects the organism by distinguishing foreign tissue and neutralizing potentially pathogenic organisms or substances. The immune system includes organs such as the skin and mucous membranes, which provide an external barrier to infection, cells involved in the immune response, such as lymphocytes, and cell products such as lymphokines.

Inference : The act of reasoning from factual knowledge or evidence.

Investigation : A systematic process that uses various types of data and logic and reasoning to better understand something or answer a question.

Law : A statement that describes invariable relationships among phenomena under a specified set of conditions.

Light: Electromagnetic radiation that lies within the visible range.

Matter: Substance that possesses inertia and occupies space, of which all objects are constituted.

Meiosis: The process of nuclear division in cells during which the number of chromosomes is reduced by half.

Membrane: A thin layer of tissue that surrounds or lines a cell, a group of cells, or a cavity; any barrier separating two fluids.

Microscope: An instrument with lenses and light that is used to observe objects too small to be visible with only the eyes.

Mitosis: A process of nuclear division in eukaryotic cells during which the nucleus of a cell divides into two nuclei, each with the same number of chromosomes.

Model : A systematic description of an object or phenomenon that shares important characteristics with the object or phenomenon. Scientific models can be material, visual, mathematical, or computational and are often used in the construction of scientific theories.

Mutation: A change in genetic sequence.

Natural selection: The theory stating every organism displays slight variations from related organisms, and these variations make an organism more or less suited for survival and reproduction in specific habitats.

Nonrenewable resource: A resource that can only be replenished over millions of years.

Observation : What one has observed using senses or instruments.

Offspring: The progeny or descendants of an animal or plant considered as a group.

Organ: A structure containing different tissues that are organized to carry out a specific function of the body (e.g., heart, lungs, brain, etc.)

Organism: An individual form of life of one or more cells that maintains various vital processes necessary for life.

Photosynthesis: A chemical process by which plants use light energy to convert carbon dioxide and water into carbohydrates (sugars).

Physiology: The scientific study of an organism's vital functions, including growth, development, reproduction, the absorption and processing of nutrients, the synthesis and distribution of proteins and other organic molecules, and the functioning of different tissues, organs, and other anatomic structures.

Polygenic: Any of a group of nonallelic genes that collectively control the inheritance of a quantitative character or modify the expression of a qualitative character.

Producer : An organism, usually a plant or bacterium, that produces organic compounds from simple inorganic molecules and energy (typically light energy) from the environment.

Recessive: An allele for a trait that will be masked unless the organism is homozygous for this trait.

Replication: In scientific research, conducting an experiment to confirm findings or to ensure accuracy. In molecular biology, the process by which genetic material is copied in cells.

Reproductive system: The system of organs involved with animal reproduction, especially sexual reproduction.

Scientist: A person with expert knowledge of one or more sciences, that engages in processes to acquire and communicate knowledge.

Space: The limitless expanse where all objects and events occur. Outer space is the region of the universe beyond Earth's atmosphere.

Theory : A set of statements or principles devised to explain a group of facts or phenomena, especially one that has been repeatedly tested or is widely accepted and can be used to make predictions about natural phenomena.

Tissue: Similar cells acting to perform a specific function.

Vaccine: A preparation of a weakened or killed pathogen, such as a bacterium or virus, or of a portion of the pathogen's structure, that stimulates immune cells to recognize and attack it, especially through antibody production.

Variable: An event, condition, or factor that can be changed or controlled in order to study or test a hypothesis in a scientific experiment.