Biology  -  1st Nine Weeks Flash Cards

|  |  |  |
| --- | --- | --- |
| 1-1 | Q | What is a manipulated (independent) variable? |
|   | *A* | *The factor in an experiment that a scientist purposely changes e.g.: sunlight*  |
| 1-2 | Q | What is a responding variable (dependent) variable? |
|   | *A* | *The factor in an experiment that a scientist wants to observe e.g.: plant growth* |
| 1-3 | Q | When graphing, what variable is placed on the X-axis (horizontal)? |
|   | *A* | *Manipulated variable (independent)* |
| 1-4 | Q | When graphing, what variable is placed on the Y-axis (vertical)? |
|   | *A* | *Responding variable (dependent)* |
| 1-5 | Q | How do you determine when to use a line graph? |
|   | *A* | *If your information (data includes 2 sets of numbers* |
| 1-6 | Q | What are the steps of the scientific method? |
|   | *A* | *Careful observations, research, state problem, form hypothesis, experiment, record and analyze results, conclusion* |
| 1-7 | Q | What is a controlled experiment? |
|   | *A* | *An experiment in which only one variable is being tested* |
| 1-8 | Q | If you were testing to see if fertilizer really enhances plant growth, what would be some controlled variables? |
|   | *A* | *Sun, type of plant, size of plant, amount of sunlight, amount of water* |
| 1-9 | Q | What is a theory? |
|   | *A* | *Unifying explanation for a broad range of observations*  |
| 1-10 | Q | What are the characteristics of life? |
|   | *A* | *Made of cells, reproduce, genetic code, grow and develop, use materials and energy, respond to their environment, maintain a stable internal environment, things change over time* |
| 1-11 | Q | What are the eight levels of organization from smallest to largest? |
|   | *A* | *Molecules, cells, groups of cells, organism, population, community, ecosystem, biosphere* |
| 1-12  | Q | What are autotrophs? |
|   | *A* | *Organisms that can capture energy from sunlight or chemicals and use that energy to produce food e.g.: plants, some algae, and certain bacteria* |
| 1-13 | Q | What is another name for autotrophs? |
|   | *A* | *Producers* |
| 1-14 | Q | What are heterotrophs? |
|   | *A* | *Organisms that rely on other organisms for their energy and food supply* |
| 1-15 | Q | What is another name for heterotrophs? |
|   | *A* | *Consumers* |
| 1-16 | Q | What is an herbivore? |
|   | *A* | *They obtain energy by eating only plants e.g.: cows* |
| 1-17 | Q | What is a carnivore? |
|   | *A* | *They eat only animals (consumers that only eat consumers) e.g. snakes, dogs, owls* |
| 1-18 | Q | What is an omnivore? |
|   | *A* | *They eat both plants and animals e.g.: humans and bears* |
| 1-19 | Q | What are detritivores? |
|   | *A* | *They feed on plant and animal remains and other dead matter (detritus)* |
| 1-20 | Q | What are decomposers? |
|   | *A* | *They break down organic matter e.g.: bacteria and fungi* |
| 1-21 | Q | What is a food chain? |
|   | *A* | *A series of steps in which organisms transfer energy by eating and being eaten* |
| 1-22 | Q | What is a food web? |
|   | *A* | *A network of complex interactions formed by the feeding relationships among the various organisms in an ecosystem* |
| 1-23 | Q | What is an energy pyramid? |
|   | *A* | *It shows the relative amount of energy available at each trophic level. Organisms use about 10% of this energy for life processes. The rest is lost as heat.* |
| 1-24 | Q | What is a biomass pyramid? |
|   | *A* | *It represents the amount of living organic matter at each trophic level. TYPICALLY, the greatest biomass is at the base of the pyramid* |
| 1-25 | Q | What is a pyramid of numbers? |
|   | *A* | *It shows the relative number of individual organisms at each trophic level* |
| 1-26 | Q | Where are the producers located on an ecological pyramid? |
|   | *A* | *At the bottom* |
| 1-27 | Q | Where is the largest group of consumers located on an ecological pyramid? |
|   | *A* | *At the second trophic level* |
| 1-28 | Q | In the water cycle, water is returned by \_\_\_\_\_ and by \_\_\_\_\_ |
|   | *A* | *Evaporation and by plants* |
| 1-29 | *Q* | *Precipitation and evaporation are components of what cycle?* |
|   | *A* | *Water* |
| 1-30 | Q | What two cycles are used in photosynthesis and cellular respiration? |
|   | *A* | *Carbon cycle and oxygen cycle* |
| 1-31 | Q | What cycle is necessary for organisms to make amino acids, which are used to make proteins?  |
|   | *A* | *Nitrogen* |
| 1-32 | Q | What is competition? |
|   | *A* | *It occurs when organisms of the same or different species attempt to use an ecological resource in the same place at the same time.* |
| 1-33 | Q | What is predation? |
|   | *A* | *It is an interaction in which one organism captures and feeds on another organism (prey)* |
| 1-34 | Q | What is symbiosis? |
|   | *A* | *It is any relationship in which two species live closely together (includes: mutualism, commensalism and parasitism)* |
| 1-35 | Q | What is Mutualism? |
|   | *A* | *It is when both species benefit from the relationship e.g.: flower/insect* |
| 1-36 | Q | What is commensalism? |
|   | *A* | *It is when one member of the association benefits and the other is neither helped nor harmed e.g.: barnacle/whale* |
| 1-37 | Q | What is parasitism? |
|   | *A* | *It is when one organism lives on or inside another organism (host) and harms it tick/dog* |
| 1-38 | Q | What is ecological succession?  |
|   | *A* | *It is a series of predictable changes that occurs in a community over time* |
| 1-39 | Q | What are three factors that affect population size? |
|   | *A* | *Number of births, number of deaths, and immigration/emigration* |
| 1-40 | Q | As the human population growth has increased over time, it will cause problems in these areas……. |
|   | *A* | *Environment and global economy* |
| 1-41 | Q | What are renewable resources? |
|   | *A* | *These can regenerate and are replaceable e.g.: water* |
| 1-42 | Q | What are nonrenewable resources? |
|   | *A* | *These are ones that cannot be replenished by natural resources e.g.: fossil fuels* |
| 1-43 | Q | What is extinction? |
|   | *A* | *It occurs when a species disappears from all or part of its range* |
| 1-44 | Q | What is an endangered species? |
|   | *A* | *It is a species whose population size is declining in a way that places it in danger of extinction* |
| 1-45 | Q | What is pollution? |
|   | *A* | *It is any potentially harmful substance added to an ecosystem* |
| 1-46 | Q | CFC’s are being currently used in what appliances? |
|   | *A* | *As coolant substances in refrigerators and air conditioners* |
| 1-47 | Q | What has caused global warming? |
|   | *A* | *Human activities have caused global warming by adding carbon dioxide and other greenhouse gases such as methane to the atmosphere. As a result, global temperatures are increasing.* |

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Biology  -  3rd Nine Weeks Flash Cards

|  |  |  |
| --- | --- | --- |
| 3-1 | Q | What type of plant did Gregor Mendel use in his genetic testing? |
|   | *A* | *Pea plant* |
| 3-2 | Q | What is dominant? |
|   | *A* | *The trait that will completely mask the effects of another trait* |
| 3-3 | Q | What is recessive? |
|   | *A* | *They are two alleles that must be present for this trait to be expressed* |
| 3-4 | Q | What is heterozygous? |
|   | *A* | *Alleles that are the different e.g.: Bb, Tt* |
| 3-5 | Q | What is homozygous? |
|   | *A* | *Alleles that are the same e.g.: BB, TT, tt* |
| 3-6 | Q | What is a genotype? |
|   | *A* | *It is the genetic makeup of an individual e.g.: tt* |
| 3-7 | Q | What is a phenotype? |
|   | *A* | *It is the physical expression of a trait e.g.: short* |
| 3-8 | Q | What is the abbreviation for the parent generation? |
|   | *A* | *P or P1* |
| 3-9 | Q | What is the name of the generation produced by the parent generation? |
|   | *A* | *F1* |
| 3-10 | Q | What is the name of the generation produced by the F1 generation? |
|   | *A* | *F2* |
| 3-11 | Q | What is a monohybrid cross? |
|   | *A* | *It is a cross of two individuals for a single contrasting trait.* |
| 3-12  | Q | If you cross Tt with tt, what % of the offspring will be tall? |
|   | *A* | *50%* |
| 3-13 | Q | If you take a tall plant and allow it to self-pollinate, how could some of the offspring turn out to be short? |
|   | *A* | *This could happen if the tall plant was heterozygous (Tt)* |
| 3-14 | Q | Who determined the structure of a DNA molecule (double helix)? |
|   | *A* | *Watson and Crick* |
| 3-15 | Q | What are the components of a nucleotide? |
|   | *A* | *Sugar, phosphate, and nitrogen base* |
| 3-16 | Q | How are the bases in a DNA molecule classified? |
|   | *A* | *Purines: guanine, adenine**Pyrimidines: cytosine, thymine* |
| 3-17 | Q | What are the complimentary base pairs in a DNA molecule? |
|   | *A* | *Adenine-Thymine ; Cytosine-Guanine* |
| 3-18 | Q | At the completion of DNA \_\_\_\_\_\_\_, there are 2 DNA molecules (each with one original strand and one new strand).  |
|   | *A* | *Replication* |
| 3-19 | Q | What is transcription? |
|   | *A* | *A single strand of mRNA forms and gets the code from the DNA* |
| 3-20 | Q | What is translation? |
|   | *A* | *The process in which mRNA, tRNA, and rRNA work together to make proteins from amino acids* |
| 3-21 | Q | What is selective breeding |
|   | *A* | *It allows only those animals with desired characteristic to produce the next generation e.g.: cattle, horses, cats, dogs* |
| 3-22 | Q | What type of DNA analysis allows researcher to identify similarities and differences in the genomes of different kinds of organisms? |
|   | *A* | *Gel electrophoresis* |
| 3-23 | Q | During the cloning of Dolly, what 2 cells were fused together? |
|   | *A* | *One body cell and one egg cell* |
| 3-24 | Q | What DNA did Dolly receive, when she was cloned? |
|   | *A* | *The DNA of the sheep that donated the body (somatic) cell* |
| 3-25 | Q | Organisms that are the result of \_\_\_\_\_\_ reproduction, are actually clones of their parents e.g.: bacteria |
|   | *A* | *Asexual* |
| 3-26 | Q | What is a genetic marker? |
|   | *A* | *A gene that makes it possible to distinguish bacteria that carry a plasmid containing foreign DNA from those that do not* |
| 3-27 | Q | How is recombinant DNA produced? |
|   | *A* | *By combining DNA from different sources* |
| 3-28 | Q | How many chromosomes are in a human karyotype? |
|   | *A* | *46* |
| 3-29 | *Q* | *In a human karyotype, how many chromosomes are sex chromosomes?* |
|   | *A* | *2; either XX(female) or XY(male)* |
| 3-30 | Q | In a human karyotype, how many chromosomes are autosomes?  |
|   | *A* | *44* |
| 3-31 | Q | How are the chromosomes arranged in a karyotype? |
|   | *A* | *Homologous chromosomes occur in pairs, and are arranged from large to small* |

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Biology  -  4th Nine Weeks Flash Cards

|  |  |  |
| --- | --- | --- |
| 4-1 | Q | What does the theory of evolution state? |
|   | *A* | *Living things change over time* |
| 4-2 | Q | Who proposed the Theory of evolution? |
|   | *A* | *Charles Darwin* |
| 4-3 | Q | Who proposed the idea of natural selection after making numerous observations of species and their geographical distributions? |
|   | *A* | *Charles Darwin* |
| 4-4 | Q | What is Natural Selection? |
|   | *A* | *A process by which individuals that are better suited to their environment survive and reproduce most successfully; also called survival of the fittest.* |
| 4-5 | Q | The two main sources of genetic variation are mutations and gene shuffling. Which one causes the most inheritable differences that occurs during the production of gametes? |
|   | *A* | *Gene shuffling* |
| 4-6 | Q | What is genetic equilibrium? |
|   | *A* | *It is when the allele frequencies do NOT change; therefore, the population will NOT evolve*  |
| 4-7 | Q | What is the fossil record |
|   | *A* | *It provides evidence about the history of life on Earth* |
| 4-8 | Q | What is relative dating? |
|   | *A* | *It is the relative age of a fossil that can be determined by comparing it to an index fossil ( an easily recognized species)* |
| 4-9 | Q | Where are the oldest fossils found? |
|   | *A* | *At the bottom layer* |
| 4-10 | Q | What does mass extinction encourage? |
|   | *A* | *The rapid evolution of surviving species by opening ecological niches* |
| 4-11 | Q | Why should we classify? |
|   | *A* | *In order to name organisms and group them in a logical manner* |
| 4-12  | Q | What composes a 2-part scientific name? |
|   | *A* | *The genus and species name (usually Latin based)* |
| 4-13 | Q | What are the seven taxonomic categories from largest to smallest? |
|   | *A* | *Kingdom, Phylum, Class, Order, Family, Genus, Species* |
| 4-14 | Q | What are the seven taxonomic categories for humans from largest to smallest? |
|   | *A* | *Kingdom-Animalia, Phylum-Chordata, Class-Mammalia, Order-Primates, Family-Hominidae, Genus-homo, Species-sapiens* |
| 4-15 | Q | What are prokaryotes? |
|   | *A* | *Cells with no nucleus or complex organelles e.g. bacteria* |
| 4-16 | Q | What factors are used to identify bacteria? |
|   | *A* | *Shape (coccus, bacillus, spirillum), movement, and how they obtain energy* |
| 4-17 | Q | Are all bacteria pathogenic ( disease-causing)? |
|   | *A* | *No; some may be helpful* |
| 4-18 | Q | Where might you find bacteria that would provide a good source of heat-stable enzymes? |
|   | *A* | *Hot springs* |
| 4-19 | Q | What are some common uses of bacteria? |
|   | *A* | *Bacteria are used in making foods, medicines, cleaning oil spills* |
| 4-20 | Q | What is the ecological role of bacteria in the environment? |
|   | *A* | *Nitrogen fixation, recycling nutrients, and photosynthesis* |
| 4-21 | Q | What is the function of helpful bacteria in the intestines of animals? |
|   | *A* | *Bacteria break down cellulose (carbohydrate found in the cell walls of plants)* |
| 4-22 | Q | What are the two components of all viruses? |
|   | *A* | *Nucleic acid surrounded by a protein coat* |
| 4-23 | Q | The 1st plants may have evolved from an organism similar to \_\_\_\_\_\_. |
|   | *A* | *Multicellular green algae* |
| 4-24 | Q | What do the Bryophtes (lack vascular tissue) include? |
|   | *A* | *Mosses, liverworts, and hornworts* |
| 4-25 | Q | What are vascular plants? |
|   | *A* | *Plants that contain tissue that transport water(xylem) and nutrients (phloem) throughout the plant e.g.: seedless-ferns, horsetails, club mosses; seeds-gymnosperms and angiosperms* |
| 4-26 | Q | What are gymnosperms? |
|   | *A* | *Plants where the seeds are on the surface of a cone* |
| 4-27 | Q | What are angiosperms? |
|   | *A* | *Plants that have reproductive organs = flowers; seeds are enclosed in an ovary that develops into a fruit* |
| 4-28 | Q | What are the characteristics of a monocot e.g.: lily? |
|   | *A* | *Single cotyledon, parallel leaves, floral parts often in multiples of three, vascular bundles scattered throughout the stem, and fibrous roots* |
| 4-29 | *Q* | *What is homeostasis?* |
|   | *A* | *When the body maintains a stable internal environment: body temperature within a safe range* |
| 4-30 | Q | Compared to the number of extinct chordate species, the number of living species is much \_\_\_\_\_\_\_\_\_. |
|   | *A* | *Smaller* |
| 4-31 | Q | The Pikaia is considered to be a chordate, based on the fact that it had a \_\_\_\_\_\_\_\_. |
|   | *A* | *Notochord* |