Biology midterm critical analysis

Science, Biology

Midterm Study Guide Answers 1. A hypothesis is an explanation of observations. “ If the floor is wet, I will slip. ” 2. A controlled experiment is when only one variable is changed. 3. If the plant you are experimenting with has a disease that is an unavoidable experimental error. 4. An enzyme speeds up reactions and lowers the energy it takes to produce something, a lock and key. 5. Autotrophs make their ownfoodby producing sugars from sunlight and various chemicals. 6. Abiotic factors are factor that are nonliving, such as the air, sunlight and the temperature. Biotic factors are living factors like birds, trees and fish. . Primary succession- occurs on surfaces where no soil exists. 8. 9. If there are too many predators and not enough prey then the predator will eventually die off. Then the prey’s population will increase. 10. Non-native species can kill native species because they aren’t familiar with the new organisms. 11. The SUN! 12. Producer because they use the suns energy. 13. When heat gets trapped in the ozone layer. 14. Eukaryotes have a nucleus with genetic information inside them and are more complex than prokaryotes which have free floating genetic information and no nucleus. 5. Nucleus has DNA Mitochondria- converts chemical energy into usable compounds Ribosomes- assembles proteins Chloroplast-converts sun’s energy into chemical energy and is only found in plants 16. Osmosis 17. ATP- stores and releases energy by breaking polypeptide bonds. 18. Photosynthesis releases energy, sugars, into plants. It takes place inside of the chloroplast and it uses water and CO2 to produce oxygen and sugars. 19. 6CO2+6H2O and light sugars+oxygen Carbon dioxide + water and Light sugars + oxygen 20. Cellular Respiration releases energy into living things.

It happens inside of the mitochondria and uses glucose, sugars from foods, to make ATP, energy. 21. Glucose is broken down in glycolysis for cellular respiration. 6O2+C6H12O6 and Light 6CO2 + 6H2O +Energy 22. Meiosis is when the number of chromosomes per cell is cut in half through separating homologous chromosomes in a diploid cell. We need meiosis for making haploid cells from diploid cells. The difference between mitosis and meiosis is mitosis makes two genetically identical diploid cells while meiosis produces four genetically different haploid cells. 23. Cancer is when our bodies can't control the growth of cells. 4. 25. The two main sources of variability are mutations and selective breeding. 26. Before a cell divides it copies its DNA. 27. Allele- one of a number of different forms of a gene Diploid- a cell that contains both sets of homologous chromosomes Haploid- cell that contains a single set of chromosomes and only a single set of genes 28. The offspring from these parents would either be homozygous dominant of heterozygous. 29. The possible genotypes would be BB, Bb and bb. 30. YY or Yy 31. The structure of DNA looks like a twisted ladder or a double helix and it was discovered by Watson and Crick. 2. The subunits of a DNA molecule are similar to the rungs on a ladder and they are made up of a phosphate group, sugar and a nitrogenous base. 33. RNA is different from DNA in many ways, many is the RNA has the sugar ribose instead of deoxyribose. Also, DNA is double stranded while RNA only has one strand and RNA has the nitrogenous base uracil compared to DNA's thymine. 34. AATCGGACTG 35. During DNA replication, DNA separates into two strands and bonds complementary nitrogenous bases together with DNA polymerase. This produces two semiconservative DNA molecules. 36.

A codon is three nucleotides that specify an amino acid in a polypeptide chain. 37. AUG codes for the amino acid methionine and you can tell by using the genetic code. 38. Transcription uses RNA polymerase that bonds together a separated piece of DNA with a strand of RNA. 39. When the cell uses information from mRNA to make proteins is called translation. 40. mRNA- to carry copies of instructions for assembling amino acids rRNA- made up of ribosomes tRNA- transfers amino acids to the ribosome specified by coded messages in mRNA 41. Recombinant DNA is DNA that is made by combining tow DNA's from different sources. 2. Selective Breeding is like breeding certain dogs together to make the healthiest and best looking puppies. 43. In biotechnology scientists use gel electrophoresis and restriction enzymes to cut and separate DNA fragments. 44. Chromosomes determine an organisms sex by men have an X and a Y while women have two X's. 45. Men are more likely to be colorblind because it is a sex-linked on the X axis. Also in women, since we have two X's, we have a chance to cover up this gene with a dominant gene but men cannot because they only have one X gene.