BSC 1005: Life Science

Exam 3 Review

Fill this review out in detail as a study guide for the Exam. Use your class notes, power point slides and textbook to help you. This is a general guide and does not necessarily include every detail that could be covered on the exam. Be sure to review your notes in addition to this study guide when preparing for the exam!

**Chapter 7:**

Terms and concepts:

* **Genetic Engineering**
* Protein Synthesis, **Genes**
* Flow of information (DNA->mRNA->Protein)
* **Transcription:** what you start with, finish with, RNA polymerase, where it takes place (see Homework)
* **Translation:** what you start with, end with, ribosomes, tRNA, codons, anticodons, how the protein is made
* **Mutations:** 3 outcomes, 2 main types
* **Cloning**, **Plasmid**, **steps in cloning**
* **Recombinant**: what is meant **r**GBH?
* Other proteins made by engineered bacteria
* **Transgenic**, GMO, selective breeding, benefits/concerns of GMO
* **Stem cells** (define), importance
* **Human Genome Project** (# of genes in humans)
* **Gene therapy**, example of its use

**Chapter 8:**

* Define **Biological Evolution,** lice example, importance of populations
* **Natural selection**
* **Microevolution**, **macroevolution**, theory
* Common ancestor
* Darwin (where he went, what he saw, ship he was on), Lyell,
* **Biological** ***Evidence*** for a common ancestor
* Biological classification, anatomical similarities (homologous features) and examples of mammalian forelimb, vestigial traits (examples), shared development, DNA similarities, etc.
* Linnean System
* Evidence: humans and apes, goose bumps, tails, DNA, skeletal, fossils and fossil dating
* Weighing the alternatives
* **Urey Miller** experiments

**Chapter 9:**

* **Tuberculosis**: what it is, how it spreads, drug resistance
* 3 Factors that cause evolution: natural selection, genetic drift, sexual selection
* **Darwin’s 4 Observations**: know and understand these
* **Fitness**, **adaptation**
* Results of natural selection
* Artificial selection
* Examples of natural selection
* **Mutations**, mutations and natural selection
* **Natural selection**: cannot cause new traits, does not result in perfection, does not cause progression towards a goal
* **Directional**, **stabilizing** and **diversifying** **selection**
* **Antibiotic** **resistance**: what it is, how it happens