**BIOLOGY MID TERM 2017**

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

Test is scheduled for: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**THINGS 2 KNOW**

80 Multiple Choice Questions

*Vocabulary to Know*

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| --- | --- | --- |
| Abiotic Factors  Activation Energy  Active Transport  Alleles  Analogous traits  Artificial Selection (aka Selective Breeding)  Anaphase  Amino Acid  Behavioral Isolation  Binomial Nomenclature  Biotic Factors  Carbohydrate  Carrying Capacity  Catalyst  Centrioles  Centromere  Chromosomes  Cladogram  Climax community | Convergent Evolution  Cytokinesis  Derived Characteristic  Diffusion  Directional Selection  Disruptive Selection  Enzyme  Eukaryotic cells  Exponential Growth  Gene Pool  Geographic Isolation  Homologous traits  Hypertonic  Hypotonic  Interphase  Isotonic  Lipid  Metaphase | Mitosis  Monomer  Mutation  Natural Selection  Nucleic Acid  Osmosis  Passive Transport  Primary Succession  Prokaryotic cells  Prophase  Protein  Secondary Succession  Sister Chromatids  Spindle fibers  Stabilizing Selection  Telophase  Temporal Isolation  Vestigial Structures |

*Concepts to Understand*

1. Prokaryotes Vs. Eukaryotes
   1. Compare and contrast Prokaryotes and Eukaryotes
   2. Give examples of each.
2. Cell Organelles
   1. What are the three parts of the cell theory?
   2. Know the functions of the major specialized organelles: Nucleus, Mitochondria, Chloroplasts, Ribosome, Golgi Apparatus, Lysosome, Endoplasmic Reticulum, Vacuole, Cell Wall
   3. Know the key differences between plant and animal cells.
   4. Understand how multicellular beings are organized from smallest to largest grouping = Single Cell, Tissue. Organ, Organ System, Complete Organism –(know them in order)
   5. Define each level and give examples.
3. Macromolecules
   1. List and describe the four macromolecules including their monomers, and major characteristics (terms to use include glycerol, polysaccharide, glucose, amino acid, fatty acid, monosaccharide, among others…)
      1. Carbohydrate
      2. Lipid
      3. Nucleic Acid
      4. Protein
   2. Define catalyst and enzyme. How do they effect activation energy
4. Cell Transport/ Osmosis
   1. Know the function and structure of the Cell membrane
   2. Understand the structure and function of the channels and pumps embedded into the cell membrane.
   3. Understand how concentration gradient of molecules effects cell movement
   4. Understand the primary difference between passive and active transport.
   5. List and describe the types of passive transport
   6. List and describe the types of active transport
   7. Understand how the three concentrations of solutes affect cells during osmosis.
5. Populations
   1. What factors contribute to exponential growth?
   2. What happens to a population as it reaches carrying capacity?
6. Darwin & Natural Selection
   1. How does natural selection drive evolution?
   2. What is meant by descent with modification?
   3. What is meant by “survival of the fittest”?
   4. Define Vestigial Structures and give an example
   5. How can embryo studies show evolution and common ancestry?
   6. Describe homologous and analogous traits & give examples of each.
7. Speciation
   1. Describe gene pool and relative frequency of traits
   2. Define Mutation, how can a mutation affect natural selection and speciation?
   3. Understand the “Bell Curves” of Speciation and give and example of each one happening.
   4. Understand the different types of reproductive isolation and how that isolation can cause speciation.
   5. Describe genetic drift and the founder effect
   6. How can the study of genes show common ancestry?
8. Ecological Succession
   1. Describe the similarities and differences between primary and secondary succession.
   2. Give examples when you would see each.
9. Mitosis/ Cell Division
   1. Understand how surface area to volume affects cells as they grow and get larger
   2. Cell Cycle: What happens during:

Growth 1 (G1)

Synthesis (S)

Growth 2 (G2)

Mitosis (M)

Cytokinesis (C)

* 1. Mitosis: What happens to the chromosomes and the cell during:
     1. Prophase
     2. Metaphase
     3. Anaphase
     4. Telophase
  2. How is cell division in plants different than in animals?
  3. How to chromosome numbers compare before and after Mitosis?
  4. How does cancer affect cell growth?

1. Taxonomy and Classification
   1. Why do we classify animals, what size are the groupings?
   2. How doe we properly write scientific names?
   3. How can we use the scientific names of animals to tell how closely related they are?
   4. Know the taxon levels in order by size (Dumb Kings Play Chess On Fat Green Stools)
   5. What was Linnaeus’s largest (most general) taxon? What is it now?
   6. Describe Convergent Evolution and how dissimilar animals may look alike based on their environments.
   7. How are derived characteristics used to construct a Cladogram?
   8. List and Describe the three Domains















