Biology 211 (2) Week 1

Chapter 1

VOCABULARY:

<table>
<thead>
<tr>
<th>Adaptation</th>
<th>Artificial selection</th>
<th>Cell theory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cells</td>
<td>Control group</td>
<td>Domain</td>
</tr>
<tr>
<td>Energy</td>
<td>Eukaryotes</td>
<td>Evolution</td>
</tr>
<tr>
<td>Fitness</td>
<td>Genus</td>
<td>Heritable</td>
</tr>
<tr>
<td>Hypothesis</td>
<td>Information</td>
<td>LUCA</td>
</tr>
<tr>
<td>Natural selection</td>
<td>Null hypothesis</td>
<td>Phylogeny</td>
</tr>
<tr>
<td>Phylum</td>
<td>Population</td>
<td>Prediction</td>
</tr>
<tr>
<td>Prokaryotes</td>
<td>Replication</td>
<td>Speciation</td>
</tr>
<tr>
<td>Species</td>
<td>Spontaneous generation</td>
<td>Taxon</td>
</tr>
<tr>
<td>Taxonomy</td>
<td>Theory</td>
<td>Theory of evolution</td>
</tr>
</tbody>
</table>

KEY CONCEPTS:

1. What are the five characteristics of life?
2. What is the difference between hypotheses and theories?
3. What are the two components of a biological theory? What are the two main theories in biology?
4. Describe the Cell Theory. Did this theory support or challenge the idea of spontaneous generation?
5. Natural selection occurs at the hierarchical level of ________, while evolution occurs at the level of ________.
6. What are the two conditions required for natural selection to occur?
7. What was Louis Pasteur’s experiment?
8. How would you correctly write an organisms genus and species?
9. Describe the relationship between fitness and adaptation.
10. What do biologist use to compare organisms that all organisms have?
11. How has our understanding of the Tree of Life changed?
First Part of Chapter 28

VOCABULARY:

- Ancestral trait
- Branches
- Character
- Clade
- Cladistics
- Derived trait
- Homology
- Homoplasy
- Hox genes
- Monophyletic group
- Nodes
- Outgroup
- Paraphyletic group
- Parsimony
- Polyphyletic group
- Polytomy
- Root
- Synapomorphy
- Tip

KEY CONCEPTS:

1. Draw a simple phylogenetic tree with one outgroup, 3 nodes, including a node that exhibits polytomy. Label the root, branches, outgroup, nodes.
2. How do ancestral traits differ from derived traits?
3. What is convergent evolution and why does it occur?
4. What is an outgroup and why is it important to include when evaluating several species and starting the process of drawing a phylogenetic tree?
5. What is the relationship between synapomorphies and monophyletic groups?