Unit 2 – Cells and Systems

Complete each of the following questions, relating to the specific learner outcomes, covered this year in Grade 8. The questions in this review reflect what you should have mastered and will be tested on in the Final Achievement Exam. The answers will be covered in class.

**Part 1 – Characteristics of Living Things**

What are the basic functions of all living things, and what are the structures that enable organisms to perform those functions? (p. 98)

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

How are living organisms organized. (p. 100-101)

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

**Part 2 – The Microscope**

Describe changes that took place in the development of the microscope over time.

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
What are the main parts of the microscope? (p.107) (Label as many parts as you can.)

Describe how to calculate the field of view. (p.111)

Part 3 – Cells

Identify the main component parts of the animal cell.
Part 4 – Cell Processes

What is a selectively permeable membrane? (p.128)

______________________________________________________________________________
______________________________________________________________________________

Describe diffusion. (p.129)

______________________________________________________________________________
______________________________________________________________________________

Describe osmosis. (p.130)

______________________________________________________________________________
______________________________________________________________________________

What is transpiration? (p.135)

______________________________________________________________________________
______________________________________________________________________________

Explain how a plant transports fluids, from the roots to the leaves.

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
Part 5 – Cell Specialization

Identify and describe the differences between different specialized cells. (p.138)

<table>
<thead>
<tr>
<th>Muscle</th>
<th>Nerve</th>
<th>Skin (epithelial)</th>
<th>Bone (connective)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What are the primary advantages of multi-cellular organisms (compared to unicellular organisms)?

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

Describe the levels of cellular organization in a multi-cellular organism. (p.140)

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
**Part 6 – Body Systems**

Identify the important parts (structures) of each of the body systems and describe how each body system has a particular function. (p.153)

<table>
<thead>
<tr>
<th>Body System</th>
<th>Structures (Parts)</th>
<th>Function of System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digestive</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nervous</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Excretory

Skeletal

Muscular

How do the different body systems work together? Give specific examples.
Part 7 – A healthy lifestyle leads to a healthy body

How can you keep each of your body systems healthy?
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

What disorders are common in each of the body systems?

Respiratory
______________________________________________________________________________

Digestive
______________________________________________________________________________

Nervous
______________________________________________________________________________

Excretory
______________________________________________________________________________

Skeletal
______________________________________________________________________________

Muscular
______________________________________________________________________________

What lifestyle choices should be made if we want healthy bodies?
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________