Special Senses Study Questions I
The EYE
Dr. J. Lim

1. What is the difference between a general sense and a special sense?

2. Identify the five (5) types of sensory receptors and state what form of stimulus it responds to.

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<thead>
<tr>
<th>Receptor</th>
<th>Responds to</th>
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3. List the parts of the eye as encountered from anterior to posterior beginning at the cornea.

4. Which tunic (coat) of the eye is the toughest and most protective? ____________

5. The “jello” in the posterior cavity of the eye is called the ____________________.

6. The lens of the eye adds layers as we age. It can, therefore, be compared with which vegetable? ____________________
   - Describe what occurs when a cataract forms.

7. Name the two types of photoreceptors found in the retina.
   - What is created when light energy strikes the pigment of a photoreceptor? ____________________

8. Name the retina’s region of sharpest vision. ______________
   - The only type of photoreceptor found here is the ____________.

9. In which part of the visual pathway to the brain do you become consciously aware of what you are seeing? ______________

10. When focusing on a NEAR object, the ciliary muscle _______________, the suspensory ligament ________________, and the lens ____________________.

11. When focusing on a FAR object, the ciliary muscle ________________, the suspensory ligament ________________, and the lens ____________________.

12. A nearsighted individual focuses light ________________ the retina.
   - Nearsightedness can be caused by an eye that is too ____________.
1. What is the difference between a general sense and a special sense?

*General senses are present in many locations throughout the body (ex: touch/pain)*  
*Special senses are produced by localized sensory organs*

2. Identify the five (5) types of sensory receptors and state what form of stimulus it responds to.

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<tr>
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<tr>
<td>Photoreceptors</td>
<td>light</td>
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<tr>
<td>Mechanoceptors</td>
<td>bending, stretching, pressure</td>
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<tr>
<td>Chemoreceptors</td>
<td>chemicals</td>
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<tr>
<td>Nociceptors</td>
<td>pain</td>
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<tr>
<td>Thermoreceptors</td>
<td>temperature</td>
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3. List the parts of the eye as encountered from anterior to posterior beginning at the cornea.

*cornea/sclera, anterior cavity/aqueous humor, iris/pupil, lens, posterior cavity/vitreous humor, retina, choroid, sclera*

4. Which tunic (coat) of the eye is the toughest and most protective? **sclera**

5. The “jello” in the posterior cavity of the eye is called the **vitreous humor**.

6. The lens of the eye adds layers as we age. It can, therefore, be compared with which vegetable? **onion**

   - Describe what occurs when a cataract forms. **Since the lens cannot grow in size, the added layers make the lens denser or more tightly packed which in turn causes a loss of flexibility (inability to focus) and loss of clarity (cataract)**

7. Name the two types of photoreceptors found in the retina. **Rods and cones**

   - What is created when light energy strikes the pigment of a photoreceptor? **Neural impulse**

8. Name the retina’s region of sharpest vision. **Fovea**

   - The only type of photoreceptor found here is the **cones**.

9. In which part of the visual pathway to the brain do you become consciously aware of what you are seeing? **Frontal lobe of the cerebrum**

10. When focusing on a NEAR object, the ciliary muscle **contracts**, the suspensory ligament **relaxed**, and the lens **thickens/fattens/becomes rounder**.

11. When focusing on a FAR object, the ciliary muscle **relaxes**, the suspensory ligament **tightens**, and the lens **flattens**.

12. A nearsighted individual focuses light **in front of** the retina.

   - Nearsightedness can be caused by an eye that is too **long**.