

# 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.

Receptor	Responds to
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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 \_\_\_\_\_.

## Special Senses Study Questions I KEY

### The EYE

Dr. J. Lim

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.

Receptor	Responds to
• <b>Photoreceptors</b>	<b>light</b>
• <b>Mechanoreceptors</b>	<b>bending, stretching, pressure</b>
• <b>Chemoreceptors</b>	<b>chemicals</b>
• <b>Nociceptors</b>	<b>pain</b>
• <b>Thermoreceptors</b>	<b>temperature</b>
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**.