Short-Answer Essays

1. Describe why humans have a blind spot.

We humans have a blind spot that takes the place of the optic nerve and blood vessels when they leave the eye and send messages to the brain. The brain is so busy at all times, that most people do not even know or realize they do have a blind spot.

2. Describe the functional and anatomic differences between rods and cones.

Rods do not give out color vision, whereas cones do give out colored vision. Rods are more sensitive to dimmed lighting and give twilight vision, cones more susceptible to brighter lighting and give daylight vision. All rod cells are alike, whereas there are three different types of cones. Rods are located around the periphery of the retina and the outer segment is cylindrical and contains rhodopsin. Cones located in the center of the retina, have a cone shaped outer segment, and contain iodopsin.

3. Describe the trichromatic and opponent-process theories of color vision.

The trichromatic and opponent-process theory is that color perception occurs throughout the relative rates of response by three types of cones. Short wavelength which are blue, medium wavelength are green, and long wavelength are red. Each of these cones respond to a large range of different wavelengths. The ratio of activity between these three types of cones are dependent on color.

4. Trace the process of interpreting auditory information from the stimulus to the interpretation.

Auditory information is first received through the ears, and inner ear. Each part is responsible for picking up different signals. The outer ear helps us to locate the source of a certain sound. The middle ear transforms waves into stronger waves in order to be interpreted. The inner ear transmits these waves through viscous fluid in the inner ear, and send out a signal to the brain representing what was heard.

5. Name and describe the major structures of the middle ear.