

Special Senses

Matching:

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| 1. Lens | a. 14___ Photoreceptive Cells responsible for color vision |
| 2. Sclera | b. 4___ Location of optic nerve in posterior of eye; creates a visual blind spot |
| 3. Vitreous Body | c. 8___ Photoreceptive Layer of eye |
| 4. Optic Disc | d. 10___ Anterior region of vascular tunic, responsible for regulating amount of light entering the eye |
| 5. Anterior Chamber | e. 6___ Muscle responsible for changing shape of lens; thus focusing |
| 6. Ciliary Body | f. 2___ Fibrous tunic; Opaque white portion of eyeball |
| 7. Fovea Centralis | g. 14___ Responsible for seeing in dimly lit environments; black and white vision |
| 8. Retina | h. 12___ Nerve responsible for carrying visual information from the eye to the brain (Ganglion cell axons) |
| 9. Cornea | i. 9___ Transparent tissue at front of eye; first tissue to begin focusing light as it enters the eye |
| 10. Iris | j. 15___ Aperture through which light enters the eye |
| 11. Choroid | k. 7___ Region of retina containing the highest number of cones; region of highest visual acuity |
| 12. Optic Nerve | l. 3___ Thick viscous fluid contained within the posterior cavity; responsible for physically and functionally supporting the retina |
| 13. Rods | m. 1___ Primary structure involved in focusing light |
| 14. Cones | n. 5___ Region of anterior cavity in front of the iris |
| 15. Pupil | o. 11___ Vascular tunic; contains light absorbing melanin |

Short Essay:

1. Describe the three tunics of the eye and the specialized structures of each tunic.
2. Explain how the shape of the lens is altered; What lens shape is used to accommodate for near vision and which shape is used for viewing far objects?
3. Describe the path that light would travel through the eye to the photoreceptor, describe all of the structures and spaces through which light would pass.

Matching:

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| 1. External Auditory Canal | a. 7___ Mechanoreceptors specifically responsible for sensing fluid vibrations produced by sound waves |
| 2. Cochlea | b. 5___ Inner ear bones responsible for amplifying sound waves |
| 3. Semicircular Canals | c. 14___ Fluid filling the cochlear duct |
| 4. Tectoral Membrane | d. 10___ Structure responsible for sensing linear motion |
| 5. Incus, Malleus & Stapes | e. 4___ Rigid gelatinous flap forming a roof over the hair cells (stereocilia are embedded in this structure). |
| 6. Basilar Membrane | f. 8___ Specialized region of basilar membrane housing the auditory hair cells |
| 7. Hair Cells | g. 13___ Fluid filling the vestibular and tympanic ducts |
| 8. Organ of Corti | h. 15___ Structure responsible for sensing rotational and linear movement |
| 9. Oval Window | i. 9___ Flexible entrance into cochlea; attached to the stapes |
| 10. Utricule & Sacculle | j. 2___ Fluid filled snail shell inner ear structure sensing sound |
| 11. Eustachian Tube | k. 3___ Fluid filled structures sensing rotational motion |
| 12. Round window | l. 1___ Responsible for directing sound into the middle ear |
| 13. Perilymph | m. 6___ Flexible membrane separating the cochlear duct from the tympanic duct; houses the Organ of Corti |
| 14. Endolymph | n. 12___ Flexible region of tympanic duct functioning to release pressure wave |
| 15. Vestibular Apparatus | o. 11___ Passage between the middle ear and nasopharynx; functions to equalize internal and external pressure of ear |

Short Essay:

1. Follow the path of sound transmission from the external ear to the cochlea. Describe the function of the structures along the path.
2. Describe how the vibrations of the inner ear ossicles are transferred into the cochlea.
3. Describe how the fluid vibrations within the cochlea are transduced into nerve electrical signals (action potentials)



