

1. What information do the semicircular canals and otolith organs of the vestibular system provide, and how is this information gathered?
2. How does bending the cilia of hair cells in the vestibular system affect their firing rate?
3. Identify one brain region that receives direct projections from the vestibular nuclei and explain its likely role.
4. What are the two basic types of somatosensory receptors, and what kind of stimuli do they generally respond to?
5. Explain how "across-fiber coding" is demonstrated in temperature perception using the "Warm Best" and "Cool Best" receptors.

6. Compare the two major pathways for somatosensory information (Spinal-Thalamic and Medial Lemniscal) from receptor to cortex.

7. Explain the concept of "Magnification Factor" in the somatosensory cortex and how it relates to the Penfield Map and the properties of somatosensory receptors. Provide examples of body areas that exhibit a high magnification factor and discuss why this is functionally significant.

8. Discuss the different mechanisms by which the Gate Theory proposes pain reduction can occur.

9. Compare and contrast the roles of the cerebellum and the basal ganglia in motor control.

10. Describe the process of muscle contraction at the cellular level.

11. What are the spinal reflexes discussed in class?

12. Compare the two major motor pathways described in the text (Cortico-Spinal and Ventro-Medial Tracts).