

Study Guide for the final examination (Friday, 5 July 2002). Be able to answer the following questions and be familiar with the concepts involved in the answers.

1. When a person loses one eye, why is depth perception not lost?
2. Describe the “size/distance” (size constancy) hypothesis of certain visual illusions. Pick two such illusions and explain them in terms of this hypothesis.
3. In stereoscopic vision, where must an object be located in relation to the Vieth-Müller circle to have zero retinal disparity? .
4. List and describe some of the monocular and binocular depth cues used by the visual system.
5. Why does the world remains stable when we move our eyes and head? Why is it more difficult to tickle ourselves than to tickle someone else? What happens if we paralyze the eyes and attempt to move the eyes to the **right**? Why?
6. Diagram the three parts of the auditory system: Outer, middle and inner ear. How is sound mapped onto the basilar membrane?
7. What are the relationships and interdependencies among the following auditory concepts: Amplitude, frequency, complexity, loudness, pitch, and timbre? Which of these are physical and which are psychological?
8. What is the critical band? Describe three psychophysical methods for measuring it.
9. According to Plomp and Levelt (1965), how far apart in frequency must two sine wave tones be in order to sound maximally unpleasant? Why do two complex musical tones sound so special when played together if their fundamental frequencies have a frequency ratio of 2:1 or 3:2?
10. In speech sounds, what is the relationship between the fundamental frequency and its harmonics and the frequencies of the three main formants? What factors influence the frequency of the first and second formants?
11. What is the major difference between a voiced phoneme (i.e., /ga/, /ba/, /da/) and their unvoiced counterparts (i.e., /ka/, /pa/, /ta/)? What evidence supports the conclusion that our speech system has mechanisms that are detection specific ranges of voice onset time (VOT)?
12. Consider the **functional** properties of the visual system and the auditory system. Discuss two ways in which these systems are similar and one way in which they are different.
13. Are there primary tastes? Define “primary” and discuss evidence for or against. Discuss Amoore’s “lock and key” concept of taste and smell perception.
14. How did Susan Schiffman (1974) use multidimensional scaling (MDS) to investigate taste and smell and how do her findings relate to Amoore’s theory of molecular properties?
15. Can humans communicate information to each other by means of chemical molecules carried in the air? Discuss two pieces of evidence supporting your answer.