**Study Guide: Brain & Perceptual Development (Feldman 3-2 & 3-3)**

**Human Growth & Development**

**Lecture 5**

**This study guide is for your use in focusing on material and understanding that will be most profitable to know on the test. You need not turn it in, and it is not graded or extra-credited.**

**Brain Development**

1. By what age does the brain reach 90% of its adult weight? At what time of development do brain cells (neurons) grow most rapidly? What are the three parts of the development cycle that characterizes brain development after birth?

2. What is synaptogenesis?

3. What is pruning and what principle guides it in brain development?

4. What is myelination, and what does it do for the brain?

5. About how many neurons does a person have at birth?

6. What are glial cells and what is their function?

7. To what does the order in which cortical regions develop correspond other than where they are located on the brain?

8. Where is there a burst of synaptic growth in the cortex during the first year? What areas show dramatic growth during toddlerhood? What is one of the last regions to develop?

9. At what age does the last brain growth spurt occur?

10. What are the results of early brain understimulation? What does brain overstimulation do?

11. In adolescence, what brain centers mature early and which centers later on? What does this result in with regard to decision making?

12. Describe 5 ways in which the brain can change in adulthood.

In the Mankato nun study, what were positive emotions and high folic acid levels linked to? How could you interpret the idea-density and teacher findings as supporting the same principle?

13. Does normal cell death in the brain due to aging render a person incapable of conducting daily activities?

14. What is dementia? About what percentage of people over age 80 have Alzheimer disease? What are the symptoms as it progresses?

15. What are plaques and tangles? What is the difference between familial and sporadic Alzheimer disease? What are some suggested risk factors for Alzheimer’s? Protective factors?

16. What is cerebrovascular dementia, and what are its causes/risk factors?

17. What is Parkinsons Disease and what types of neurons are involved? What are the symptoms?

18. What are five different reversible dementias?

19. What is perception in contrast with simple sensation?

**Perceptual Development**

20. Describe the newborn’s or less-than-one-month-old’s capacity to see, hear, taste, and smell.

21. Describe the Cat in the Hat research.

32. What odors do we know that newborns like and dislike? What sounds do young babies prefer?

33. How early do babies gain some sense of depth perception?

34. What is the visual acuity of a newborn? By what age, on average, do infants achieve 20/20 visual acuity? (6 mos. to 1 year)

35. What is depth perception, and at what age do infants show evidence of having developed it? (2-4.5 months) According to Eleanor Gibson, why do infants older than this still crawl across the visual cliff?

36. What is intermodal perception, and how do babies show us that they have it?

37. Describe the research methods of visual preference, orienting & tracking, and habituation/dishabituation. What do researchers believe that these indicate?

38. At what kinds of stimuli do infants prefer to look? How about faces? How early do they give evidence of being able to discriminate among faces?

39. What does differentiation theory say infants tend to look for perceive from the environment?

40. In what areas of understanding do researchers believe that infants have visual expectations that can be violated? How early are these formed? Could you explain the “Baby Mathematics” slide?

41. In general, what happens to the senses in older adulthood?

42. Describe typical vision problems in middle and late adulthood? What three diseases are most likely to compromise vision for people in later adulthood? Describe these.

43. How early do hearing declines often start? What percentage of people over 75 has hearing problems?

44. What happens to the senses of taste and smell as people age?