9.01 - Neuroscience & Behavior
Fall 2003
Massachusetts Institute of Technology
Instructor: Professor Gerald Schneider

9.01 Study Questions

Lectures 35-36: Motivation 1

1) Which parts of the midbrain are most like the hypothalamus?

2) Activation of various parts of the midbrain or 'tweenbrain by electrical stimulation can cause behavioral arousal accompanied by sympathetic-nervous-system arousal. What are two major differences between effects of stimulating limbic and non-limbic (somatic) parts of these brain regions?

3) The anterior hypothalamic area has been found to be important for temperature regulation. To explore the mechanism of temperature regulation in this part of the brain, what could you look for with single unit recording methods?

4) Describe some "appetitive" and some "consummatory" behavior patterns involved in temperature regulation. (You should be able to do this from an understanding of the definitions given in class.)

5) Forebrain removal results in different effects on appetitive and consummatory behavior in animals. What is the difference? Give examples.

6) Animals with lesions of the ventromedial nucleus region of the hypothalamus become hyperphagic. What does this term mean? Do these animals have an increase in hunger? Think carefully about how hunger can be defined for an animal.

7) What is the evidence that the lateral hypothalamic area contains a "hunger center"? Two kinds of evidence were mentioned in class. Describe an additional type of evidence from your textbook. Also describe evidence that limits the generality of the claim.

8) What is the "ideal weight" of a person? Use evolutionary considerations, and consider the role of weight in the survival of hunter-gathering tribes.