Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Fred and Theresa Holzclaw

AP Biology

Chapter 39-Motor Mechanisms and Animal Behavior

***39.3 Discrete sensory inputs can stimulate both simple and complex behaviors***

1. How is *behavior* defined?

 6. What is a *fixed action pattern* (FAP)? Give an example.

7. What is a *sign stimulus*?



8. *Nicholas Tinbergen*’s work with the stickleback fish is a classic study. Explain what he found. Use the terms *fixed action pattern* and *sign stimulus* in your response.

10. Explain what is meant by *circadian rhythms*. Identify two behaviors, either plant or animal, that demonstrate a circadian rhythm. (You may need to refer to previous chapters for examples.)

11. Discuss two navigational strategies used by birds to migrate.

12. Animals communicate with various **signals** that lead to a **response**. (*The signal-response is an important concept to remember*.) Discuss two specific examples using different organisms.

***39.4 Learning establishes specific links between experience and behavior***

16. What is the difference between *innate* and *learned* behavior? Give an example of each.

18. Describe the process of *imprinting*, and explain what is meant by *sensitive* or *critical period*.

***39.5 Selection for individual survival and reproductive success can explain diverse behaviors***

29. What is proposed by the *optimal foraging theory*? Explain it in terms of cost and benefit, and cite two examples from your text.

31. Explain each of these mating systems:

**promiscuity**

**monogamy**

**polygamy**

***39.6 Genetic analysis and the concept of inclusive fitness provide a basis for studying the evolution of behavior***

37. Explain the evolutionary advantage to a population of having members who exhibit *altruistic behavior*.

38. *Altruism* may reduce the fitness of an individual—for example, by making that individual more obvious to a predator. Explain this behavior using the concept of *inclusive fitness*.

39. Explain the logic behind geneticist *J.B.S. Haldane*’s comment that he would lay down his life for two brothers or eight cousins.

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