**Possible Behavior Free Response Questions**

**1.** **Describe** the sequence of events responsible for:

**(a)** the creation and propagation of an action potential (*nerve impulse*) along a neuron. **[10]**

**(b)**  the transmission of this action potential across a synapse to another neuron**. [10]**

**2.** Seeds that are randomly positioned when planted in a pot of soil placed on a window sill produce seedlings with downward growing roots and upward growing shoots (stems). Above ground, the shoots are oriented toward light. **Describe** the biochemical and physiological mechanisms that occur to produce the responses listed below and **explain** how each response is beneficial to the plant.

**(a)** the downward growth of the roots **[7]**

**(b)** the upward growth of the shoots **[7]**

**(c)** the bending of the shoots toward the light **[7]**

**3.** **Define** photoperiodism.**[2]** **Describe** three examples of photoperiodism **[6]** in plants and **explain** how each **[12]** example gives the plant an evolutionary advantage.

**Possible Grid-Ins / Short Answers**

**1.** What Plants Talk About.

**2.** Circadian **/** Biological Rhythms

**3.** Animal Behavior / Chi-Square

**4.** Q10 Coefficient