

**Circle any or all that are correct : for each, explain why you chose your answer**

These are meant to represent the type of question and amount of detail that will be on the exam. Not the breadth of topics to be covered.

Umwelt refers to

- A. The organism's environment
- B. The organism's relation to other organisms
- C. The organism's perception of the world around it
- D. The organism's ability to evolve its sensory input
- E. The organism's reproductive fitness

Selective pressures that may shape a sensory system include

- A. Competition for food
- B. Competition for mates
- C. Environmental conditions
- D. Competition for territory

What factor determines whether an animal will exhibit adjustable responses

- A. Brain size
- B. Past experience with stimuli
- C. Evolutionary advantage for the ability to adjust
- D. Poor sensory tuning and inability to interpret stimuli

An individual can increase its own fitness by doing which of the following

- A. Reproducing more than other individuals of the same species
- B. Avoiding contact with other individuals of the same species
- C. Reducing the reproductive success of others of the same species

Which of the following statements describes the conditions in a living neuron?

- A. The inside of a neuron has a negative electrical potential relative to the outside of a neuron at all times.
- B. The inside of a neuron has a positive electrical potential relative to the outside of a neuron at all times.
- C. The electrical potential of a neuron at rest is negative but becomes positive when "excited". The electrical potential of a neuron at rest is positive but becomes negative when "excited".
- D. The inside of a neuron is always electrically neutral relative to the outside of a neuron.

Which of the following statements describes the conditions in a living neuron?

- A. Sodium concentration is higher inside the neuron and potassium concentration is higher outside the neuron.
- B. Sodium concentration is higher outside the neuron and potassium concentration is higher inside the neuron.
- C. Sodium concentration is higher inside the neuron and potassium concentration is higher inside the neuron.
- D. Sodium concentration is higher outside the neuron and potassium concentration is higher outside the neuron

Konrad Lorenz studied "imprinting" in geese. This behavior is

- A. An instinct
- B. Involves learning
- C. Is an inherited trait

North American Bats emit “chirps” at about 10 Hz. Each chirp lasts ~ 10 milliseconds. Therefore the duration the end of one chirp and the beginning of the next chirp is

- A. 200 milliseconds
- B. 500 milliseconds
- C. 90 milliseconds
- D. 10 milliseconds

Which of the following is the best behavior definition for an ethogram

- A. Fighting = aggressive lunging of one individual toward another
- B. Fighting = forward movement of one individual toward another with antenna straight up
- C. Fighting = forward movement with the intent to do harm to another individual

Cricket call rate is determined by

- A. Genetics
- B. Developmental environment
- C. Current environmental temperature
- D. Evolutionary history

Which of the following statements were NOT among the reasons Tinbergen gave to explain why, in 1963, there was a general lack of interest in the study of survival value.

- A. There was a reaction against uncritical acceptance of selection theory
- B. Some scientists felt that the study of survival value necessarily required guesswork.
- C. It is impossible to design an experiment to demonstrate survival value.

In the paper about zoo research by Hosey which of the following were NOT challenges to be overcome for animal behavior research in zoos

- A. There are changing missions of the zoos.
- B. In academic science, there is a shift from causal (mechanistic) research to functional (ultimate explanations) research in animal behavior.
- C. There are additional administrative duties for zoo staff, eliminating the time to do the work.
- D. There are methodological difficulties having to do with the enclosures, need to exhibit animals, and a resistance to manipulating the animals.
- E. Zoo animals are not appropriate objects for any study in Animal Behavior.

What information can animals use to direct their own movement through space

- A. Landmarks
- B. The sun
- C. The stars
- D. Olfactory cues
- E. Magnetic fields
- F. Their internal clock
- G. The movement of other animals
- H. Memory of past experience

Most behaviors are orchestrated by the activity of many genes. Therefore behaviors are said to be what kind of trait

- A. Quantitative
- B. Polygenic
- C. Pleiotropic
- D. Complex
- E. Epistatic