ASSIGNMENT
(Tutor Marked Assignment)

Course Code: MZOE-002
Assignment Code: MZOE-002/TMA/2026
Maximum Marks: 100

Note: Attempt all questions. The marks for each question are indicated against it.

1. What is mimicry? Explain its different types in animals with suitable examples. (10)

2. a). What is classical conditioning? Write its components. (5)

   b). Discuss theroles played by some common vertebrate hormones inregulation of behaviour. (5)

3. a). Explain the interrelationship of altruism and inclusive fitness. (5)

   b). What is reciprocal altruism? Give its any three examples. (5)

4. Write short notes on: (10)

   i) Post-insemination mate guarding

   ii) Evolutionary importance of sexual dimorphism

   iii) Reproductive fitness

5. a). What is parental manipulation? Describe various ways in which parents manipulate their progeny. (5)

   b). Discuss the Hamilton Rule in the context of family relationships. (5)

6. a). Differentiate between minimum and optimal standards of animal welfare. (5)

   b). Discuss the role of environmental coping issues in animal welfare. (5)

7. Discuss the advantages and limitations of the Five Freedoms. (10)

8. a) How can animal welfare assessment be used for continuous improvement in animal welfare? (5)

   b) What issues might conflict with the desires of zoos to provide good welfare for the species in their care? (5)

9. a). What is meant by the term ‘resource holding potential’ (RHP) and list some common attributes that affect RHP. (5)

   b). Write three important signals that dogs give as a threat before they attack. (5)

10. a). Describe three examples of cognitive responses that are indicative of emotional states and sentience in animals. (5)

    b). Describe how different ethical views might influence decisions to use animals in experiments. (5)

1. What is mimicry? Explain its different types in animals with suitable examples. (10)

Answer

Mimicry is an evolutionary adaptation in which one organism, called the mimic, resembles another organism or sometimes an object in its surroundings in appearance, sound, smell or behaviour. The organism or object being copied is called the model. The resemblance changes the response of a third organism, such as a predator, prey, mate or host, and thereby gives some advantage to the mimic. In animals, mimicry may help in escaping predators, approaching prey, obtaining food or increasing reproductive success.

Defensive mimicry

Defensive mimicry protects an animal from predators. One important form is Batesian mimicry. Here a harmless or palatable species resembles a dangerous, toxic or unpalatable species. Predators that have learned to avoid the model also avoid the mimic. A familiar example is the common Mormon butterfly, in which females can resemble the unpalatable common rose butterfly. Hoverflies that resemble stinging wasps or bees provide another example. The mimic gains protection without paying the energetic cost of producing venom, toxin or other defence.

In Mullerian mimicry, two or more genuinely harmful or unpalatable species share a similar warning pattern. Both benefit because predators learn the warning signal more quickly and the cost of predator education is spread among the species. The viceroy and monarch butterflies are often discussed as an example because both can be unpalatable and show similar orange-and-black warning patterns. Mullerian mimicry therefore has a mutual benefit, unlike Batesian mimicry where the harmless mimic benefits mainly from the reputation of the model.

Aggressive mimicry

Aggressive mimicry is used by a predator or parasite to approach its prey or host without being recognised as a threat. The mimic may copy a harmless or useful species, or may imitate a signal that attracts the victim. The blue-striped fangblenny, for example, can resemble cleaner wrasses. Fish normally allow cleaner wrasses to approach closely, so the mimicking fangblenny can come near and bite tissue or scales. Another striking example occurs in some predatory fireflies, where females imitate the flashing signals of females of another species and attract males that are then captured and eaten.