

2023 Bi H2 Q15

Section: Sustainability and Interdependence

Topic: Social Behaviour

Question Summary

Write notes on altruism and primate behaviour, giving definitions, features, examples, and evolutionary significance.

Worked Solution

(i) Altruism

Definition: Behaviour by an individual that benefits another at a cost to itself. Altruism can increase the persistence of shared genes or be favoured when benefits are later returned.

Types of altruism:

- Kin selection: directed towards relatives; increases inclusive fitness. Example: alarm calling in meerkats risks the caller but protects kin.
- Reciprocal altruism: between non-relatives; help is repaid later. Example: vampire bats sharing blood meals with partners that later reciprocate.
- Features: recognition of relatives or reliable partners, memory of previous interactions, repeated opportunities to reciprocate.

■ Answer (i): Altruism benefits others at a cost to the donor and is explained by kin selection and reciprocal altruism with clear examples.

(ii) Primate behaviour

Key features of primate social behaviour:

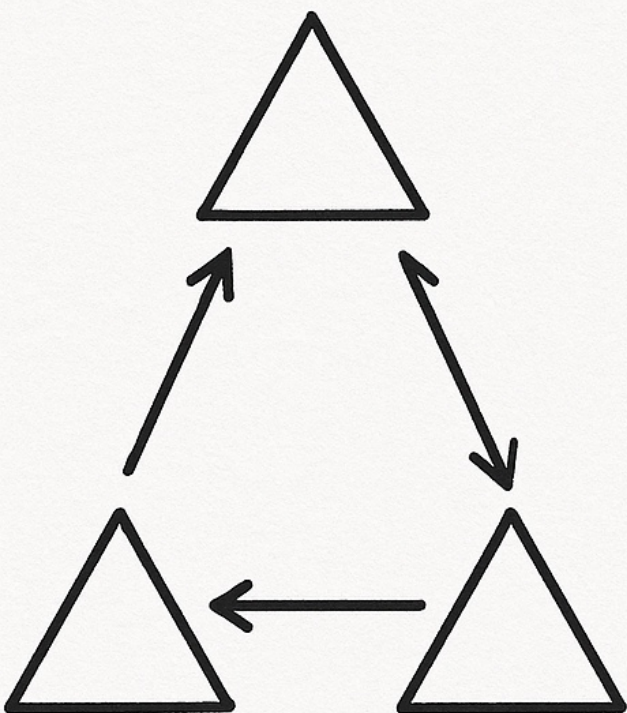
- Dominance hierarchies: reduce conflict and organise access to resources; subordinates gain protection within the group.
- Grooming: strengthens social bonds, reduces tension, and aids hygiene; often used in reconciliation after conflict.
- Communication: facial expressions, gestures, and vocalisations coordinate group activities and warn of danger.
- Parental care: prolonged juvenile period supports learning of complex social and survival behaviours.
- Cooperation: alliances, cooperative defence, and food sharing contribute to group stability.
- Learning: young learn by observation and imitation, enabling transmission of behaviours across generations.

■ Answer (ii): Primate behaviour is complex and cooperative, involving hierarchy, communication, grooming, extended parental care, and learned behaviours that stabilise groups and enhance survival.

Revision Tips

- Kin selection: help relatives to increase inclusive fitness. •
- Reciprocal altruism: help now, return later. •
- Primates: social intelligence includes grooming, hierarchy, alliances, and communication. •
- Long parental care allows learning and culture in primate groups.

Altruism



Social hierarchy

