

ANIMAL BEHAVIOUR

Paper 11

THEORY

(48 Periods)

Unit 1: Introduction

(5)

Origin and history of ethology, Brief profiles of Karl Von Frish, Ivan Pavlov, Konrad Lorenz, Niko Tinbergen, Asking questions about behaviour- proximate and ultimate, Objective of behaviour, Behaviour as a basis of evolution, Behaviour as a discipline of science

Unit 2: Mechanisms of Behaviour

(5)

Innate behaviour, Instinct, Stimulus filtering, Sign stimuli, Code breakers

Unit 3: Patterns of Behaviour

(14)

Reflexes: Types of reflexes, reflex path, characteristics of reflexes (latency, after discharge, summation, fatigue, inhibition) and its comparison with complex behaviour

Orientation: Primary and secondary orientation; kinesis-orthokinesis, klinokinesis; taxis-tropotaxis and klinotaxis, menotaxis (light compass orientation)

Learning: Associative learning, classical and operant conditioning, Habituation, Imprinting

Unit 4: Social Behaviour

(6)

Insects' society; Honey bee: Society organization, polyethism, foraging, round dance, waggle dance, Experiments to prove distance and direction component of dance, learning ability in honey bee, formation of new hive/queen

Unit 5: Altruism

(4)

Reciprocal altruism, Hamilton's rule and inclusive fitness with suitable examples

Unit 6: Sexual Behaviour

(8)

Asymmetry of sex, Sexual dimorphism mate choice, Intra-sexual selection (male rivalry), Inter-sexual selection (female choice), Infanticide, Consequences of mate choice for female fitness, Sexual conflict for male verses female parental care, Courtship behavior in 3-spine stickleback

Unit 7: Biological Clocks

(6)

Circadian rhythms, Tidal rhythms, Lunar rhythms, Advantages of biological clocks, Jet lag, Entrainment

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PRACTICAL

1. To study different types of animal behaviour such as habituation, social life, courtship behaviour in insects, and parental care from short videos/movies and prepare a short report.
2. To study nests and nesting habits of the birds and social insects.
3. To study the behavioural responses of wood lice to dry condition.
4. To study behaviour responses of wood lice in response to humid condition.
5. To study geotaxis behaviour in earthworm.
6. To study the phototaxis behaviour in insect larvae.
7. Visit to Forest/ Wild life Sanctuary/Biodiversity Park/Zoological Park to study behavioural activities of animals and prepare a short report.

ESSENTIAL READINGS

- David McFarland, *Animal Behaviour*, Pitman Publishing Limited, London, UK.
- Manning, A. and Dawkins, M. S, *An Introduction to Animal Behaviour*, Cambridge University Press, UK.
- John Alcock, *Animal Behaviour*, Sinauer Associate Inc., USA.

SUGGESTED READING

- Paul W. Sherman and John Alcock, *Exploring Animal Behaviour*, Sinauer Associate Inc., Massachusetts, USA.