

**M.Sc., II SEMESTER  
SOFT CORE PAPER- 2  
ETHOLOGY AND WILDLIFE BIOLOGY**

**48 Hrs**

**PART – A: ETHOLOGY**

**UNIT - I**

**8 Hrs**

- a. Descriptive versus experimental approaches
- b. Reflexes and complex behaviour- Latency, after discharge, summation, warm up, fatigue inhibition and feedback control
- c. Instinctive Behaviour - Fixed action pattern, Types of sign stimuli and releasers as triggers, Genetic basis of instinctive behaviour.

**UNIT - II**

**8 Hrs**

- a. Learning- Classical conditioning experiment, latent and insight learning. Social learning, learning sets and play.
- b. Development of behaviour- Causes of behavioral changes during development, development of bird song.
- c. Importance of early experience – Critical period- Filial imprinting, Sexual imprinting in birds, Imprinting like process in mammals.

**UNIT – III**

**8 Hrs**

- a. Foraging and anti-predator behaviour:
  - i. Anti predator behaviour – avoiding detection through colour and Markings (Mullarian mimicry)
  - ii. Warning coloration
  - iii. Batesian mimicry
- b. Biological communication: Forms of signals, vision, audition and chemicals

**UNIT – IV**

**8 Hrs**

**a. Sexual Behaviour**

- i. Hormones and sexual behaviour – Selected examples of courtship and mating behaviour.
- ii. Pheromones in Insects and Mammals
- iii. Lee Boot, Whitten, Bruce, Collidge and Castro-Vandenberg effect/s
- iv. Selected examples of courtship and mating behaviour

**b. Social organization**

- i. Introduction
- ii. Advantages of grouping
- iii. Social organization in insects with special reference to ants and honeybees
- iv. Social organization in sub human primates
- v. Altruism

## **PART –B: WILDLIFE BIOLOGY**

### **UNIT V**

**8 Hrs**

- a. Scope and values of wildlife (Ecological, Aesthetic, Scientific, Recreational, Medicinal)
- b. Causes of wildlife depletion: Degradation and destruction of natural habitats, Exploitation for commercial purposes, Deforestation, Agricultural expansion, Urbanization and Industrialization, forest fires and hunting.
- c. Wildlife corridors, Human-wildlife conflicts
- d. Wildlife awareness and education, Wildlife and tribal welfare

### **UNIT VI**

**8 Hrs**

- a. Conservation strategies: Red data book, protected area network, Role of NGOs in conservation.
- b. Wildlife act and legislation: Wildlife Protection Act 1972; Biological Diversity Act 2002.
- c. Wildlife conservation projects in India (with special reference to Project Tiger, Project Hungul and Gir Project)
- d. In-situ conservation: Bioreserves, National parks, Wildlife sanctuaries and Safari's in India
- e. Management of Bioreserves, National parks, Wildlife sanctuaries and Safaris.
- f. Ex-situ conservation: Zoo garden, Management of Zoos, Captive breeding, Artificial insemination, Cryopreservation (techniques and applications) Germplasm banks,

**TUTORIALS – On the basis of the proposed chapters.**

**2x16 = 32 Hrs.**

### **REFERENCES**

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- 2) Manning A. and Dawkins M.S. (1997).
- 3) Tinbergen (2006) Social behaviour in Animals. J.V. Publishing House Jodhpur India.
- 4) Vandenberg. J.E.(Ed) (1983). Pheromones and Reproduction in mammals. Academic Press. NewYork.
- 5) Agrawal, K.C. 2000. Biodiversity. Agrobios. India.
- 6) Negi,S.S and Bahuguna, V.K. 1983. An Introduction to wildlife management. Bishen Singh Mahendra Pal Singh. Dehara Dun, India.
- 7) NBA. 2004. The Biological Diversity Act (2002) and Biological Diversity Rules (2004). National Biodiversity Authority, India.
- 8) Saharia, V.B. 1982. Wildlife in India. Natraj Publishers. Dehara Dun.

- 9) Anderson S (1991) Managing on Wildlife Resources. Prentice Hall, Englewood Cliffs, New Jersey
- 10) Gee E.P (1964) The wildlife of India. E.P. Dulton and Co. N.Y
- 11) Hosetti B.B. (1997) Concepts in Wildlife Management. Daya Publishing House, Delhi
- 12) Hosetti B.B. and A. Kumar (1998) Environmental Impact Assessment and Management. Daya Publishing House Delhi
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- 14) Nair S.C. (1991) The Sothern Western Ghats: A Biodiversity conservation plan. Indraprasta Press, New Delhi
- 15) Nair S.M. (1992) Endangered animals of India and their conservation, NBT, New Delhi
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- 17) Prater S.H. (1971) The Book of Indian animals, 3rd Edn. Bombay Natural History Society, Bombay
- 18) Tikade B.K. (1983) Threatened animals of India, Zoological Survey of India, Calcutta

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