

B.Sc. ZOOLOGY SYLLABUS UNDER CBCS

(With effect from 2016-2017)

II - SEMESTER

DSC-1B (Theory)

Ecology, Zoogeography and Animal Behavior

Max. Marks: 80

UNIT – I

- 1.1 Ecosystem structure and functions.
- 1.2 Types of Ecosystems –Aquatic and Terrestrial.
- 1.3 Biogeochemical cycles - Nitrogen, Carbon, Phosphorus and Water.
- 1.4 Energy flow in ecosystem; Food chain, food web and ecological pyramids.
- 1.5 Animal Associations - Mutualism, commensalism, parasitism, competition, predation.

UNIT – II

- 2.1 Concept of Species, Population dynamics and Growth curves.
- 2.2 Community Structure and dynamics; Ecological Succession.
- 2.3 Ecological Adaptations.
- 2.4 Environmental Pollution – Sources, Effect and Control measures of Air, Water, Soil and Noise pollution.
- 2.5 Wildlife conservation - National parks and Sanctuaries of India, Endangered species. Biodiversity and hotspots of Biodiversity in India.

UNIT – III

- 3.1 Zoogeographical regions – Palaearctic, Nearctic, Neotropical, Oriental, Australian and Ethiopian regions - their Climatic and faunal peculiarities.
- 3.2 Wallace line
- 3.3 Discontinuous distribution.
- 3.4 Continental Drift

UNIT – IV

- 4.1 Types of Behaviour- Innate and Acquired, Instinctive and Motivated behavior.
- 4.2 Taxes, Reflexes, Tropisms.
- 4.3 Physiology and phylogeny of learning, trial and error learning, Imprinting, habituation, Classical conditioning, Instrumental conditioning.
- 4.4 Social behavior, Communication, Pheromones.
- 4.5 Biological rhythms, Biological clocks, Circadian rhythms.

Suggested Readings

M.P.Arora, '*Ecology*' Himalaya Publishing company.

P.D.Sharma, '*Environmental Biology*'.

P.R.Trivedi and Gurdeep Raj. '*Environmental Ecology*'

Buddhadev Sarma and Tej Kumar, '*Indian Wildlife Threats and Preservation*

Chapman J.L. and Reiss M.J, '*Ecology Principles and Applications*, Second Ed., Cambridge University Press, London.

Benny Joseph, '*Environmental Studies*, TATA McGraw Hill Com., New Delhi.

Eugene P. Odum, '*Fundamentals of Ecology* Third Ed., NataraJ Publishers, Dehradun.

Veer Bala Rastogi, "Ecology and Animal Distribution"

P.K. Gupta, "Text Book of Ecology and Environment"

Bhatnagar and Bansal, "Ecology and Wildlife biology"

Dasmann, "Wild life Biology"

Reena Mathur, "Animal Behaviour"

Alocock, "Animal Behaviour- an Evolutionary Approach"

B.Sc. PRACTICAL SYLLABUS FOR II SEMESTER
ZOOLOGY - Core Paper – II
Ecology, Zoogeography and Animal Behavior

Max. Marks: 50

1. Determination of pH of Soil and Water
2. Estimation of salinity (chlorides) of water in given samples.
3. Estimation of Carbonates and bicarbonates in the given water samples.
4. Estimation of dissolved oxygen of pond water, sewage water and effluents.
5. Identification of Zooplankton from a nearby water body.
6. Study of Pond Ecosystem / local polluted site - Report submission
7. Study of at least 3 endangered or threatened wild animals of India through photographs / specimens / models
8. Field visit to Zoo Park to study the management, behavior and enumeration of wild animals.
9. Identification of Zoogeographical realms from the Map and identify specific fauna of respective regions.
10. Observe the response of invertebrates in different lightening conditions

Computer aided techniques should be adopted as per UGC guide lines.

Suggested manuals

1. **Robert Desharnais, Jeffrey Bell**, 'Ecology Student Lab Manual, Biology Labs'
2. **Darrell S Vodopich**, 'Ecology Lab Manual'