

B.Sc.(Part-I)(With Credits)-Regular-Semester 2012 Sem II  
**2SEVS-T2-Environmental Science-II : Paper-II (Species Ecology) (New Course)**  
**(Environmental Biology, Ecology and Sustainable Development) (Old Course)**

P. Pages : 4

GUG/W/16/5576

**Environmental Science-II : Paper-II (Species Ecology) (New Course)**

Time : Three Hours



Max. Marks : 50

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- Notes : 1. All questions are compulsory and carry equal marks.  
2. Illustrate the answers with suitable diagrams and examples.

1. Discuss pattern of animal distribution. What are the barriers to distribution? 10

**OR**

Define animal behavior. Describe forms of animal behavior.

2. Define biological clock. Discuss lunar periodicity. What are the effects of photoperiod on animals? 10

**OR**

Define biodiversity. Describe in-situ and ex-situ methods for conservation of wildlife.

3. a) Discuss means to dispersal of animals. 2½  
b) Describe social life in honey bee. 2½  
c) Give an account on brooding in birds. 2½  
d) State importance of forest. 2½

**OR**

- e) Describe desert as a biome.  
f) Write an informative note on family and group behaviour.  
g) State sources of pheromones in human beings.  
h) With suitable examples discuss categories of wildlife.
4. a) Discuss zoogeography of Indian sub region. 2½  
b) State caste system in ants. How formation of new ant colonies takes place? 2½  
c) Describe parental care in amphibians. 2½

d) Discuss contribution of afforestation and reforestation in forest conservation.

2½

**OR**

e) Which are the major flora and fauna present in rainforest?

f) Describe shelter, nutrition and defense in social insects.

g) What are the places of nest building? Name the material used for it.

h) Give significance of wildlife.

**5.** Answer in 2-3 lines **any ten.**

**10**

a) What is phytogeography?

b) Nearctic region is associated with which part of the world.

c) What is cosmopolitan distribution?

d) State advantages of social behaviour.

e) Why evolution of social life took place?

f) How vision affects behavior?

g) What is circadian rhythm?

h) How mother and baby communicate?

i) What are pheromones?

j) Give examples of minor forest products.

k) Name hotspot of biodiversity in India.

l) What JFM stands for?

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**(Old Course)**

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- Notes : 1. All questions are compulsory and carry equal marks.  
2. Illustrate the answers with suitable diagrams and examples.

1. What is environmental biology? Describe the scope of environmental biology. **10**

**OR**

How quantitative analysis of plant community is carried out? **10**

2. Describe the structure of an ecosystem. State the different components of forest ecosystem. **10**

**OR**

Discuss various issues associated with Tehri dam and Sardar Sarovar Narmada project. **10**

3. a) Discuss interaction between plant and soil microorganisms. **2½**

b) Explain the concept of community turnover. **2½**

c) Describe the biotic components of an ecosystem. **2½**

d) Write special features of Jal Biradari project. **2½**

**OR**

e) Explain fire as an abiotic factor. **2½**

f) Describe methods for estimation of population density. **2½**

g) Explain in detail phosphorous cycle. **2½**

h) How NGO's had contributed in environmental protection? **2½**

4. a) What are the significance of limiting factors? **2½**

b) Describe the age structure of population. **2½**

c) Explain in detail sulphur cycle. **2½**

d) Briefly describe the concept of sustainable development. **2½**

**OR**

- e) State Liebig's law of Minimum. 2½
- f) Explain the term community interdependence. 2½
- g) State abiotic components of pond ecosystem. 2½
- h) Give highlights of Chipko movement. 2½
- 5. Answer in 2-3 lines **any ten.** **10****
- a) What is microclimate?
- b) State Shelford's law of Tolerance.
- c) Define autecology.
- d) What are xerophytes?
- e) Define population.
- f) Enlist major communities.
- g) What are the types of biogeochemical cycle?
- h) Define biomes.
- i) Define ecosystem.
- j) In which part of India Chipko movement was started?
- k) Give the examples of NGO's working at national levels.
- l) What is sustainable development?

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