

**M.Sc. Examination 2018**  
**Semester-III**  
**Environmental Science**  
**Course : MEC-32**  
**(Ecology)**

**Time : 3 Hours**

**Full Marks : 40**

Questions are of value as indicated in the margin

Answer question No. **1** and **any four** from the rest.

1. Write short notes on **any four** of the following : 2×4=8
    - a) Agroecosystems
    - b) Hardy-Weinberg Principles
    - c) Significance of Shelford's 'Law of Tolerance'
    - d) Parasitism
    - e) Antibiosis
    - f) K-selected species
  
  2. a) Discuss the 'Theory of inheritance of acquired characters in organisms'.  
b) What do you mean by 'survival of the fittest'? How it will become advantageous for the 'origin of new species'? 4+(2+2)=8
  
  3. a) Explain different gradients of a pond ecosystem.  
b) Comment on ecological significance of sea beach. 4+4=8
  
  4. Write notes on the following : 4+4=8
    - a) Ecological pyramids
    - b) Concept of productivity
  
  5. a) Draw a schematic diagram and give a general description of phosphorous cycle.  
b) Illustrate the impacts of microbial activities on regulating nitrogen cycle. 6+2=8
  
  6. a) Explain Lotka-Votterra competition equation with suitable example.  
b) Discuss the mutualistic behaviours among lianas. 6+2=8
  
  7. Write notes on the following : 3+5=8
    - a) Survivorship curves
    - b) Sequential stages of a typical hydrosere (in plants)
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