

# B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

## February / March 2023 Semester End Main Examinations

**Programme: B.E.**

**Semester: VII**

**Branch: Institutional Elective**

**Duration: 3 hrs.**

**Course Code:19BT7OEEEM**

**Max Marks: 100**

**Course: Ecology and Environmental Management**

**Date: 22.02.2023**

**Instructions:** 1. Answer any FIVE full questions, choosing one full question from each unit.  
 2. Missing data, if any, may be suitably assumed.

### UNIT - I

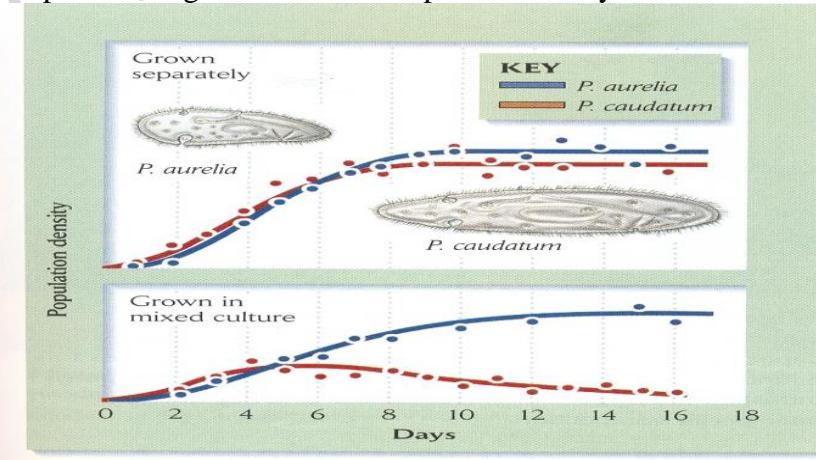
1 a) Define the Shelford's Law of tolerance. What are the drawbacks of this Law? **04**  
 b) Differentiate between (i) Habitat and niche (ii) Generalist and specialist species. **06**  
 c) Define ecological succession. Elucidate the process of formation of a climax community **10**

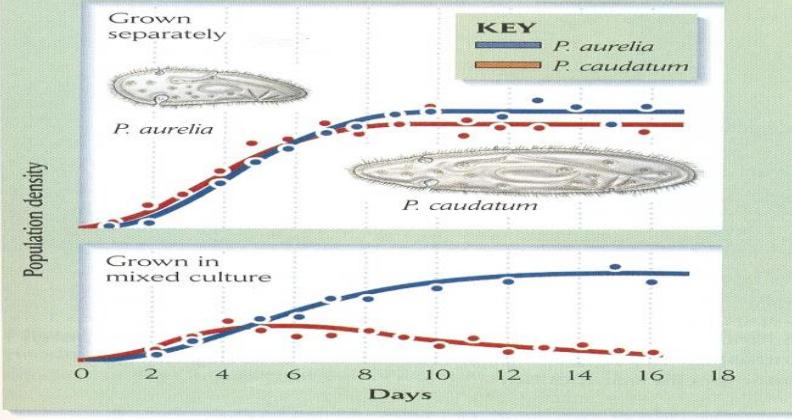
### UNIT - II

2 a) A community contains the following species: **08**

Species	Number of Individuals
1. Species A	413
2. Species B	196
3. Species C	693
4. Species D	254
5. Species E	320

i) Calculate the Simpson's diversity index value for this community.  
 ii) Explain the significance of Simpson's diversity index.

b)  **04**



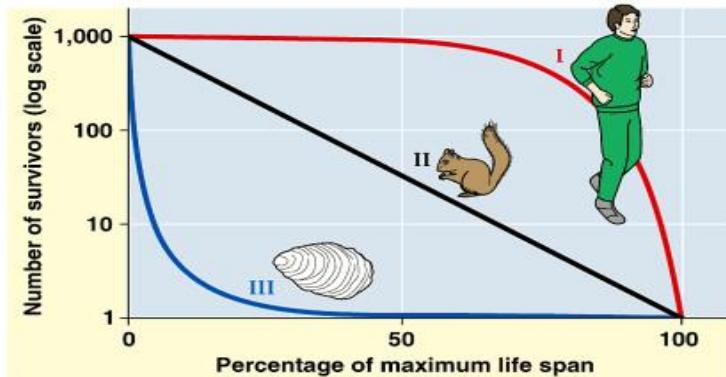
i) Identify the principle being demonstrated in the above figure.  
 ii) What are the salient features of this principle.

c) Resource partitioning obviates competitive exclusion, allowing the coexistence of several species using the same limiting resource. Justify the statement with a suitable example. **08**

## OR

3 a)

04



(i) Identify the type of curve shown in the above figure.  
(ii) List the salient features of the three types of curves shown.

b) Explain with the help of suitable diagrams the different patterns of dispersion of population. 08

c) Illustrate the Logistic model of population growth. How is growth rate measured? 08

## UNIT - III

4 a) What is a phytogeographical region? What are the salient features shown by any specific phytogeographical region. List out the phytogeographical regions of India based on D.Chattarjee's classification. 10

b) List the zoogeographical regions of India and give one example of the fauna of each region. 10

## UNIT - IV

5 a) "Sustainable use of natural resources is an integral part of any sustainable development program" Justify the given statement with suitable examples. 04

b) What are the major causes of man-wildlife conflicts? Discuss the remedial steps that can curb the conflict with suitable examples. 10

c) Differentiate between alpha, beta and gamma species richness. 06

## OR

6 a) With the help of a schematic diagram explain the bioaccumulation process of organic toxicants. 10

b) What is bio -pesticide? List the types of bio-pesticides. 04

c) Distinguish between Genetic, Species, and Ecosystem diversity giving suitable examples. 06

## UNIT - V

7 a) Explain the impact of industrialization on environment taking "Acid rain" as an example. 10

b) What are the principles of Good Ecological Restoration Practice? Explain any four principles with respect to human systems. 10

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