

Course III: Environmental biology (MSCZO -508)

Environmental biology

UNIT WISE CONTENTS (MSCZO-508)

Block I: Environmental biology

Unit 1: Ecology of population

- 1.1 Objectives
- 1.2 Introduction
- 1.3 Characteristic of population
- 1.4 Population growth curve
- 1.5 Population regulation
- 1.6 Life history strategies (R & K selection)
- 1.7 Age structure Population
- 1.7 Summary
- 1.8 Terminal Questions and Answers

Unit 2: Population Growth

- 2.1 Objectives
- 2.2 Introduction
- 2.3. Growth of organism with non overlapping generation
- 2.4 Stochastic and time lag model of population growth
- 2.5 Exponential growth, Verhulst–Pearl logistic growth model
- 2.6 Stable age distribution
- 2.7 Population growth projection using Leslie Matrix
- 2.8 Summary
- 2.9 Terminal Questions and Answers

Unit 3: Predation

- 3.1 Objectives
- 3.2 Introduction
- 3.3 Patterns of abundance
- 3.4 Models of Prey-Predation dynamics
- 3.5 Optimal foraging theory
 - 3.5.1 Patch choice
 - 3.5.2 Diet
 - 3.5.3 Prey
 - 3.5.4 Selectivity
 - 3.5.5 Foraging time
- 3.6 Role of predation in nature
- 3.7 Summary
- 3.8 Terminal Questions and Answers

Block II

Unit 4: Competition and Niche theory

- 4.1 Objectives
- 4.2 Introduction
- 4.3 Competition
 - 4.3.1 Intra-specific competition
 - 4.3.2 Inter-specific competition
- 4.4 History of niche concepts
- 4.5 Symbiosis
- 4.6 Summary
- 4.7 Terminal Questions and Answers

Unit 5: Community Ecology and Ecological Succession

- 5.1 Objectives
- 5.2 Introduction
- 5.3 Nature of Community
- 5.4 Community Structure
- 5.5 Level of species diversity
- 5.6 Edges & Ecotones
- 5.7 Succession & Type of Ecological Succession
- 5.8 Concept of Climax
- 5.9 Summary
- 5.10 Terminal Questions and Answers

Unit 6: Applied Ecology and Conservation Biology

- 6.1 Objectives
- 6.2 Introduction
- 6.3 Environmental Pollution
- 6.4 Global environmental changes
- 6.5 Principle of Conservation
- 6.6 Major drivers of diversity changes
- 6.7 Summary
- 6.8 Terminal Questions and Answers