

UNIT WISE CONTENTS (BSCZO202)

Block I: Environmental Biology

Unit 1: Ecological concept

Basic concept of ecology, definition, types of ecology, significance, concepts of habitat and ecological niche.

Unit 2: Environment

Abiotic and biotic factors. Abiotic factors (Light intensity, temperature, humidity, topography, edaphic factors). Producer, consumer and decomposer. Primary and secondary productivity.

Unit 3: Ecosystems

Major ecosystems (Freshwater, marine, forest and desert). Concept, component and their function, energy flows, food chain, food web, trophic structures, ecological pyramids. Introduction of law of limiting factors.

Unit 4: Biosphere

Hydrosphere, Lithosphere and Atmosphere.

Unit 5: Biogeochemical cycles

Biogeochemical cycles (nitrogen, carbon, and hydrogen and oxygen cycles).

Block II: Biodiversity Conservation and Management

Unit 6: The concept of Biodiversity, Conservation and Management

Biodiversity - Definition - genetic, species and ecosystem diversity. Importance of biodiversity. Hotspots, threats to biodiversity - conservation of biodiversity. Principles of wildlife management, Protected Areas & Wildlife habitat in India: wildlife sanctuaries, National Parks and Biosphere reserves in India, endangered and threatened species of animals in India. Wildlife Protection Acts 1972 and Biodiversity Act (2001).

Unit 7: Protected Area Network in Uttarakhand

Protected area network initiative in Uttarakhand : Wildlife Sanctuaries, National Park, Biosphere Reserves. Major endangered fauna representing to PA's of Uttarakhand State.

Unit 8: Environmental Pollution and Management

Air, water, noise and soil pollution. Biodegradable and non degradable pollutants, Biomagnifications and Bioremediations.

Unit 9: Policies and Regulation

Disaster Management - Floods, Earth quake, Cyclone and Land slides. Biomagnifications and Bioremediation.

Block II: Animal Behavior

Unit 10: Concepts and patterns of behavior

Types of behavior, behavioral equipments (senses, organs), Individual behavior pattern and homing behavior. parental care in Amphibia.

Unit 11: Social organization

Social life in termites, dance language of the honey bees, Biological clocks, Migration in birds and fishes.