

SUBJECT - BIOLOGY

BLOCK 1 - Organization in the Living World

TOPIC- Cell - Basic Unit of life: Cell as a basic unit of life; prokaryotic and eukaryotic cells, multicellular organisms; cell membrane and cell wall, cell organelles; chloroplast, mitochondria, vacuoles, endoplasmic reticulum, Golgi apparatus; nucleus, chromosomes - basic structure, number.

Tissues, Organs, Organ System, Organism: Structure and functions of animal and plant tissues (four types in animals; meristematic and permanent tissues in plants)

BLOCK 2- World of Living

TOPIC - Life processes: "living being". Basic concept of nutrition, respiration, transport and excretion in plants and animals

BLOCK 3 - Biological Diversity

TOPIC - Diversity of plants and animals - basic issues in scientific naming, basis of classification. Hierarchy of categories / groups, Major groups of plants (salient features) (Bacteria, Thallophyta, Bryophyta, Pteridophyta, gymnosperms and Angiosperms). Major groups of animals (salient features) (Non-chordates upto phyla and chordates upto classes).

BLOCK 4 - Health and Diseases

TOPIC - Health and its failure. Infectious and Non-infectious diseases, their causes and manifestation. Diseases caused by microbes (Virus, Bacteria and protozoans) and their prevention, Principles of treatment and prevention. Pulse Polio programmes

BLOCK 5 - Control and co-ordination

TOPIC - Tropic movements in plants; Introduction to plant hormones; control and co-ordination in animals : nervous system; voluntary, involuntary and reflex action, chemical co-ordination: animal hormones

BLOCK 6 - Reproduction

TOPIC - Reproduction in animal and plants (asexual and sexual) reproductive health-need for and methods of family planning. safe sex vs HIV/AIDS. Child bearing and women's health

BLOCK 7 - Heredity and evolution

TOPIC - Heredity; Mendel's contribution- Laws for inheritance of traits: Sex determination: brief introduction; Basic concepts of evolution.

BLOCK 8- Natural Resources

TOPIC - Physical resources: Air, Water, Soil. Air for respiration, for combustion, for moderating temperatures; movements of air and its role in bringing rains across India

Sources of energy: Different forms of energy, conventional and non-conventional sources of energy: fossil fuels, solar energy; biogas; wind, water and tidal energy; nuclear energy. Renewable versus non-renewable sources.

BLOCK 9 - Management of natural resources

TOPIC - Conservation and judicious use of natural resources. Forest and wild life; Coal and Petroleum conservation. Examples of people's participation for conservation of natural resources. Big dams: advantages and limitations; alternatives, if any. Water harvesting. Sustainability of natural resources

BLOCK 10 - Our environment

TOPIC - Eco-system, Environmental problems, Ozone depletion, waste production and their solutions. Biodegradable and non-biodegradable substances.

Air, water and soil pollution.

Bio-geo chemical cycles in nature: Water, oxygen, carbon and nitrogen.

BLOCK 11 - Food Production

TOPIC - Plant and animal breeding and selection for quality improvement and management; use of fertilizers, manures; protection from pests and diseases; organic farming