DEFINITION OF ENVIRONMENT

THE TERM ENVIRONMENT HAS BEEN DERIVED FROM A FRENCH WORD “ENVIRONIA”, WHICH MEANS “TO SURROUND”. IT IS A COMPOSITE TERM REFLECTING THE CONDITIONS IN WHICH THE ORGANISMS CONSISTING OF AIR, WATER, FOOD, SUNLIGHT, etc THRIVE AND BECOME LIVING SOURCE OF LIFE FOR ALL THE LIVING AND NON – LIVING BEINGS INCLUDING PLANT LIFE.

COMMENTS OF ENVIRONMENT

LEVELS OF ORGANISATION

MEANING OF ECOSYSTEM

AN ECOSYSTEM IS A COMMUNITY OF ORGANISMS INTERACTING WITH EACH OTHER AND WITH THEIR ENVIRONMENT IN SUCH A WAY THAT THE ENERGY IS EXCHANGED AND CYCLING OF ELEMENTS EMERGE.

TYPES OF BIODIVERSITY

- GENETIC DIVERSITY
- SPECIES DIVERSITY
- ECOSYSTEM DIVERSITY

BENEFITS ARISING FROM BIOLOGICAL DIVERSITY

ECOSYSTEM SERVICES

- PROTECTION OF WATER RESOURCES
- SOILS FORMATION AND PROTECTION
- NUTRIENT STORAGE AND CYCLING
- BREAKDOWN AND ABSORPTION OF POLLUTANTS
- CONTRIBUTION TO CLIMATE STABILITY
- RECOVERY FROM UNPREDICTABLE EVENTS
BIOLOGICAL RESOURCES

- FOOD
- MEDICINAL RESOURCES
- WOOD PRODUCTS
- ORNAMENTAL PLANTS
- BREEDING STOCKS, POPULATION RESERVOIRS
- FUTURE RESOURCES

SOCIAL BENEFITS

- RESEARCH, EDUCATION AND MONITORING
- RECREATION
- CULTURAL VALUES

THREATS TO BIODIVERSITY LOSS

- HABITAT LOSS
- CLIMATE CHANGE
- OVER EXPLOITATION OR UNSUSTAINABLE USE
- INVASIVE ALIEN SPECIES
- POLLUTION

RESTORATION & CONSERVATION OF BIODIVERSITY

EX - SITU CONSERVATION

IN - SITU CONSERVATION

SOLUTION TO BIODIVERSITY LOSS

NOTE: THESE POINTS ARE INDICATIVE AND NOT EXHAUSTIVE. PLEASE ELLABORATE THE ANSWERS WITH PROPER EXAMPLES WHEREVER APPLICABLE. PLEASE REFER BOOKS AND QUESTIONS AS INFORMED IN THE CLASS.
MEANING OF RESOURCES

ENVIRONMENT PROVIDES US A VARIETY OF PRODUCTS WHICH WE UTILIZE FOR OUR DAY TO DAY REQUIREMENTS. THE TERM RESOURCE MEANS ANY MATERIAL IN THE ENVIRONMENT WHICH HAS UTILITY. NATURAL RESOURCES ARE DERIVED FROM THE ENVIRONMENT. MANY NATURAL RESOURCES ARE ESSENTIAL FOR HUMAN SURVIVAL, WHILE OTHERS ARE USED FOR SATISFYING HUMAN DESIRE.

ENDOWMENT AND RESOURCES

CLASSIFICATION OF RESOURCES

ON THE BASIS OF STAGES OF DEVELOPMENT

STAGES OF DEVELOPMENT

- ACTUAL
- POTENTIAL

ON THE BASIS OF OWNERSHIP OF RESOURCE

OWNERSHIP OF RESOURCE

- INDIVIDUAL
- NATIONAL
- INTERNATIONAL

ON THE BASIS OF FREQUENCY OF OCCURANCE

FREQUENCY OF OCCURRENCE

- UBQUITOUS
- LOCALIZED

ON THE BASIS OF FREQUENCY OF ORIGIN

FREQUENCY OF ORIGIN

- ORGANIC OR BIOTIC
- INORGANIC OR ABIOTIC
ON THE BASIS OF DURABILITY, AVAILABILITY AND REGENERATION

- NATURAL OR PHYSICAL RESOURCES
  - INEXHAUSTIBLE OR RENEWABLE OR FLOW RESOURCES
  - EXHAUSTIBLE OR NON RENEWABLE OR FUND RESOURCES
- HUMAN OR CULTURAL RESOURCES

WATER RESOURCES

IMPORTANCE OF WATER

- FUNDAMENTAL IMPORTANCE
- HIGH SURFACE TENSION
- TRANSPARENT BODY
- ABSORPTION CAPACITY
- HUMAN CIVILIZATIONS
- A SOURCE OF CLEAN POWER
- INDUSTRIAL DEVELOPMENT
- DOMESTIC PURPOSE
- WATER DISPOSAL
- NAVIGATION

ISSUES RELATED TO WATER

- OVERUTILISATION OF WATER
- POLLUTION OF SURFACE AND GROUNDWATER
- WATER CRISIS

RAINWATER HARVESTING

- ARTIFICIAL RECHARGING OF GROUND WATER
- ROOF TOP RAINWATER HARVESTING

FOREST RESOURCES

IMPORTANCE OF FOREST

- PROTECTIVE FUNCTIONS:
  - WATERSHED PROTECTION
  - EROSION CONTROL
  - LAND BANK
  - ATMOSPHERIC REGULATION
PRODUCTIVE FUNCTION:
- FOOD
- MARKET USE

DEVELOPMENTAL FUNCTION

CAUSES OF DEFORESTATION
- AGRICULTURE EXPANSION
- ANIMAL GRAZING
- COMMERCIAL LOGGING
- CASH CROP ECONOMY
- MINING
- OTHER FACTORS

EFFECTS OF DEFORESTATION
- ATMOSPHERIC POLLUTION
- DEFORESTATION AND GLOBAL WATER CYCLE
- DEFORESTATION AND GLOBAL CARBON CYCLE
- LOSS OF BIODIVERSITY
- INCREASE IN SOIL EROSION

MEASURES TO CONSERVE FOREST
- REGULATED AND PLANNED CUTTING OF TREES
- CONTROL OVER FOREST FIRE
- REFORESTATION AND AFFORESTATION
- CHECK OVER FOREST CLEARENCE FOR AGRI – CULTURAL AND HABITATION PURPOSES
- PROTECTION OF FOREST
- PROPER UTILISATION OF FOREST AND FOREST PRODUCTS
- RECYCLING AND REPLACING FOREST PRODUCTS
- NATURE CONSERVATION
SOIL RESOURCES

IMPORTANCE OF SOIL
- Farming and Food Production
- Forestry
- Filter
- Foundation for Structures
- Preserver
- Regulates Climate
- Ecology
- Affects Water Cycle

THREATS TO SOIL
- Soil Erosion
- Desertification
- Acid Rain
- Fertilizers
- Pollutants
- Deforestation
- Impact on Biodiversity
- Salinisation
- Loss of Organic Matter

ENERGY RESOURCES
- Non Renewable Energy
  - Coal
  - Petroleum
  - Natural Gas
  - Nuclear Energy
- Renewable Energy
- SOLAR ENERGY
- WIND ENERGY
- BIOMASS
- HYDRO ELECTRIC POWER
- TIDAL ENERGY

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ENVIRONMENT AND ECONOMIC ACTIVITIES

ECONOMIC ACTIVITIES

PRIMAR Y SECTOR

SECONDARY SECTOR

TERTIARY SECTOR

QUATERNARY SECTOR

QUINARY SECTOR

ENVIRONMENTAL PROBLEMS ASSOCIATED WITH ECONOMIC ACTIVITIES

PRIMARY SECTOR

ENVIRONMENTAL IMPACT OF AGRICULTURE

➢ CLIMATIC CHANGE
➢ DEFORESTATION
➢ GENETIC ENGINEERING
➢ OVER IRRIGATION
➢ POLLUTANTS
➢ SOIL DEGRADATION
➢ WASTE

PRIMARY SECTOR

ENVIRONMENTAL IMPACT OF MINING

➢ WATER POLLUTION
ACID ROCK DRAINAGE

EFFECTS OF MINING ACTIVITY ON BIODIVERSITY

AQUATIC ORGANISMS

EFFECTS ON AGRICULTURE

EFFECTS ON ANIMALS

EFFECT OF MINE POLLUTION ON HUMANS

PRIMARY SECTOR

ENVIRONMENTAL IMPACT OF FISHING

OVERFISHING

ECOLOGICAL DISRUPTION

BY – CATCH

SECONDARY SECTOR

ENVIRONMENTAL IMPACT OF INDUSTRIES

WATER POLLUTION

AIR POLLUTION

WILDLIFE EXTINCTION

GLOBAL WARMING

SOIL POLLUTION AND DEGRADATION OF LAND QUALITY

OTHER EFFECTS

TERTIARY SECTOR

ENVIRONMENTAL IMPACT OF TRANSPORT

RESOURCE USE

CLIMATE CHANGE

AIR POLLUTION

NOISE AND RELATED POLLUTION

LAND TAKE

WATER IMPACTS
TERTIARY SECTOR

ENVIRONMENTAL IMPACT OF TOURISM

➢ WATER RESOURCES
➢ LOCAL RESOURCES
➢ LAND DEGRADATION
➢ POLLUTION
➢ SOLID WASTE AND LITTERING
➢ SEWAGE
➢ PHYSICAL SYSTEM

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ENVIRONMENT MANAGEMENT

DEFINITION:
ENVIRONMENTAL MANAGEMENT IS THE PROCESS OF ALLOCATING NATURAL AND ARTIFICIAL RESOURCES SO AS TO MAKE OPTIMUM USE OF THE ENVIRONMENT IN SATISFYING THE BASIC HUMAN NEEDS AT THE MINIMUM, AND MORE IF POSSIBLE, ON A SUSTAINABLE BASIS.

FEATURES OF ENVIRONMENT MANAGEMENT:
- GENERIC TERM
- SYSTEMATIC PROCESS
- SUSTAINABLE MANAGEMENT
- MULTI – DISCIPLINARY
- WIDE RANGE
- GAINING SIGNIFICANCE

SCOPE OF ENVIRONMENT STUDIES
- ENVIRONMENTAL SCIENCE
- ENVIRONMENTAL ENGINEERING
- ENVIRONMENTAL MANAGEMENT

AIMS AND OBJECTIVES OF ENVIRONMENTAL IMPACT ASSESSMENT
- SYSTEMATICALLY AND EXPLICITLY ASSESS
- PROJECT DEVELOPMENT
- DEVELOPMENT CONTROL
- PLAN DEVELOPMENT
- POLICY DEVELOPMENT

ROLES AND PERSPECTIVE IN EIA
- ENVIRONMENTAL SCIENTIST
- SOCIOLOGIST
- MEMBER OF THE LOCAL COMMUNITY
- CONSULTANT
- POLITICAL SCIENTIST
- POLITICIAN
- ECONOMIST
FEATURES OF ENVIRONMENTAL AUDIT

- MANAGEMENT TOOL
- SYSTEMATIC PROCESS
- PERIODIC EVALUATION
- ENVIRONMENTAL PERFORMANCE
- DIFFERS FROM EIA
- ENVIRONMENTAL AUDIT REPORT
- REQUIRES SPECIALIZED PEOPLE
- WIDE SCOPE

TYPES OF ENVIRONMENTAL AUDITS

- CORPORATE AUDIT
- LIABILITY AUDIT
- TECHNICAL AUDIT
- COMPANY INTERNAL AUDITS
- PRODUCT AUDIT
- ENERGY AUDIT

ROLE OF TECHNOLOGY IN ENVIRONMENT MANAGEMENT

- ENVIRONMENTAL INFORMATION SYSTEM (ENVIS)
- GEOGRAPHICAL INFORMATION SYSTEM (GIS)
- GLOBAL POSITIONING SYSTEM (GPS)
- REMOTE SENSING

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