

## Points to remember

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### Unit – II-2 (CHE120)

- Biodiversity: the variety or variability of organisms and ecosystem is referred to as biodiversity.
- Types of biodiversity: Genetic diversity, Species diversity, Ecosystem diversity
- Genetic diversity: Variations among the genes of the same species are known as genetic diversity. E.g., different breeds of dogs, different types of rice etc.
- Species diversity: Diversity which arises due to variations among species present in specific areas is called as 'species diversity'. E.g., Horses and donkeys are distinct species, as are lions and tigers.
- Ecosystem diversity: Ecosystem diversity is therefore, the diversity of habitats which include the different life forms within. E.g., animals in desert (camel, lizards etc.) are different from animals in pond (fishes, planktons etc.).
- Biodiversity gradually increases near equator.
- Value of biodiversity: Survival (food), health and healing (medicines), products (wood, cotton, rubber), ethical values (moral), aesthetic values (natural beauty).
- Biodiversity hotspot: A biodiversity hotspot is a biogeographic region with a significant reservoir of biodiversity that is under threat from humans.
- Criteria of biodiversity hotspot: The number of species present, The number of those species found exclusively in an ecosystem, The degree of threat they face.
- Biodiversity hotspot of India: The Western Ghats, The Eastern Himalayas, Indo-Burma.
- Endangered species: Plant or animal species which are at the verge of their extinction are called endangered species.
- Some endangered species of India: Flying squirrel, Gir lion, Crocodile, Flamingo, Wild ass, Desert cat, desert fox, Asiatic elephant, black buck.
- Red data book: A database that contains a list of endangered plant and animal species.
- Specieses according to threat: Endangered species > vulnerable species > rare species.

- Endemic species: The plant or animal species confined to a particular region and having originated there or a species which occur continuously in that area are known as endemic species.
- EDGE (Evolutionarily Distinct and Globally Endangered) species: The species having few close relatives, are often the only surviving member of their genus, and sometimes the last surviving genus of their evolutionary family.
- Threats to biodiversity: Urbanization, deforestation, agriculture, eutrophication, forest fire, mining, exploitation of water resources, construction of dams, waste disposal, pollution, overgrazing, poaching of wildlife.
- Man-animal conflict: shrinkage of habitat, man-eating tendency, food scarcity, electric wiring, lack of corridors, inadequate compensation to the farmers.
- Types of conservation: In-situ (Protection of species in their natural habitat), ex-situ (Protection in a place away from their natural habitat).
- Examples of In-situ conservation: National parks, wildlife sanctuaries, biosphere reserves.
- Examples of Ex-situ conservation: gene bank, botanical gardens, aquaria, tissue culture technique, DNA technology.
- National park: forestry operations and other activities such as grazing of domestic animals is prohibited, No human inhabitation is allowed, It comprises the core zone, There are 90 parks in India.
- Wildlife sanctuary: Hunting, shooting and fishing would be prohibited. It comprises the core zone, restoration zone and buffer zone. In India there are about 492 wildlife sanctuaries.
- Biosphere reserve: Natural areas that are generally used for scientific study. It comprises core, buffer, restoration and transition zones.
- Core zone: Undisturbed and legally protected ecosystem.
- Buffer zone: It surrounds the core area and it's dedicated to research and educational activity.
- Transition zone: Outer most region where inhabitation, agriculture, recreational activity occur.
- Gene bank (or germplasm bank): Seed bank, pollenbank, grain bank, sperm bank, ova bank are types of gene bank.
- Botanical garden: used for the conservation of rare and endangered plant species for study and research of specific plant.
- Aquaria: used for the threatened and endangered fresh water species.

- Tissue culture technique: a special technique used for asexual propagation of plants (or animal) using their tissue or cells.
- DNA technology: DNA of plant or animal cell or a part of it to be conserved.
- Advantages of in-situ conservation: Long term protection, Better opportunity for conservation as well as evolution, Cheaper.
- Disadvantages of in-situ conservation: Less protection against pollution.
- Advantages of ex-situ conservation: Long-term conservation, The species survive longer and may breed more offspring than usual, The quality of offspring may be improved by genetic techniques, Breeding of hybrid species is possible.
- Disadvantages of ex-situ conservation: Not a viable option for protection of rare species, Can be adopted for only a few kinds of species, Overprotection may result in loss of natural occurrence.
- Zoo-geographical regions (division according to types of animals) of India: Himalayan Region, Malabar Region, Nilgiri Region, Northern Plains, Desert Lands, Deccan Plateau Region.
- Phyto-geographical regions (division according to types of plants) of India: The Western Himalayas, The Eastern Himalayas, Western Deserts, Gangetic Plains, Central India, Western Coast, Deccan Plateau, North-East India, Andaman and Nicobar Islands.
- India is a Mega-diversity nation: Different types of diversity present in India are: Geographical diversity, Climatic diversity, Biodiversity, Habitat diversity, Cultural diversity.