

1) **What are the Factors of biodiversity?**

Biodiversity vary with respect to changes in the following factors, Climate change, Geology, Natural selection, Species evolution & Sea level.

2) **What are Foundation species?**

Foundation species, plays a major role in shaping communities. They create & Enhance the habitats in ways that provides benefits to other species. They facilitate the survival & reproduction of other species in the community. For example, elephants push over, break, or uproot trees, creating forest openings in the grasslands and woodlands of Africa

3) **Define Mycoplasma?**

The Mycoplasma are bacteria that completely lack a cell wall. They are the smallest living cells known and can survive without oxygen. Many mycoplasma are pathogenic in animals and plants.

4) **What are the Types of symbiosis?**

Common form of symbiosis are:

o **Commensalism: Commensalism** is a symbiotic relationship in which one member of the relationship benefits, and the second is neither helped nor harmed.

o **Mutualism:** Mutualism is a symbiotic relationship that benefits both members. In mutualism, two species behave in ways that benefit both by providing each with food, shelter, or some other resource. For example, **honeybees**,

5) **What are the Interspecific adaptations?**

Predators exert selective pressure on their prey, leading them to have better adaptations to survive & evade capture. In turn, the predators themselves evolve to become better hunters. This back-and-forth evolutionary process b/w predator & prey generally leaves both species more refined. By gaining certain kinds of adaptations predator & prey both become more active in their responses.

Common Interspecific adaptations,

- ☐ Camouflage
- ☐ Counter-shading
- ☐ Aposematic coloration
- ☐ Mimicry
- ☐ Chemical warfare

6) **Explain the Types of protozoans?**

1. Amoeboid protozoans 2. Flagellated protozoans 3. Ciliated protozoans 4. Sporozoans

o **Amoeboid protozoans:** These organisms live in fresh water, sea water or moist soil. They move & capture their prey by putting out pseudopodia (false feet) as in *Amoeba*. Marine forms have silica shells on their surface. Some of them such as *Entamoeba* are parasites.

o **Flagellated protozoans:**

- Free-living or parasitic. They have flagella.
- The parasitic forms cause diastases such as sleeping sickness. Example: *Trypanosoma*.

o **Ciliated protozoans:**

- o Aquatic and movement by cilia.

- o A cavity (gullet) opens to outside of the cell surface.
- o The coordinated movement of rows of cilia causes the water loaded with food to be driven into the gullet. o Example: **Paramecium**

Sporozoans: This includes diverse organisms that have an infectious spore-like stage in their life cycle. The most notorious is *Plasmodium* (malarial parasite) causes malaria disease which has a staggering effect on human population.

- 7) In how many parts solid wastes distributed?

All waste that we generate can be categorised into three types,

1. Recyclable
2. Bio-degradable,
3. Non-biodegradable.

- 8) **Define Commensalism?**

Commensalism is a symbiotic relationship in which one member of the relationship benefits, and the second is neither helped nor harmed.

- 9) **What is Distribution of population?**

General patterns of population distribution or dispersion

1. Clumping
2. Uniform dispersion
3. Random dispersion

1. Clumping: Individuals are found in form of groups or clusters due to uneven distribution of resources.

2. Uniform dispersion: The tendency for populations to be found evenly distributed about their habitat. This is generally caused by a species ability to survive anywhere in their habitat. They use the resources found immediately around them, & spread out as to use all of the available resources.

3. Random dispersion Distribution of populations in a random fashion through out their habitat. Generally randomly distributed populations are rare while clumped distribution is common.

- 10) **How can we analyze any type of soil?**

Soil types: Type of a soil can be determined by,

- Composition of the material
- Topography
- Climate
- Time length

In general soils are classified into 2 main groups on the base of climate, **1.**

Pedalfer soils 2. Pedocal soils

1. Pedalfer soils: The term *Pedalfer* is a combination of *ped* (soil), *al* (aluminium), & *fer* (iron).

- o Acidic soils formed in temperate (wet) climates.
- o Extensive leaching activity.
- o Supports growth of deciduous forests and tall grasses.

2. Pedocal soils: *ped* for soil, *cal* for calcium carbonate.

- o Soils that are formed in dry (arid & semiarid) climates & are basic in nature.
- o Less leaching activity.

Promotes growth of desert shrubs & small & medium grasses.

11) **Define Demography?**

The Study of human population and the factors that regulate the growth of population. Population of any ecosystem is regulated by certain biotic and abiotic factors which are necessary for the growth of population. **Factors regulating population,** □□Birth rate □□Death rate □□Food □□Climate □□Water

12) **Define eutrophication?**

Eutrophication: A long-term increase in excess nutrients into an ecosystem causes higher biological activity this is known as eutrophication or harmful algal blooms. It decreases the oxygen content rapidly.

13) **Define Red tides?**

Red tide: The harmful and toxic blooms of red Dinoflagellates causes the colour of sea water to become red.

14) **What Factors that effect ecosystem diversity?**

Ecosystems develop in response to local conditions, which are influenced by □Climate patterns □Soil types □Topography

15) **What is Survival of mechanism of endotherm in hot and cold environment?**

Survival mechanisms in hot environment:

- o Sweating
- o Panting
- o Vasodilation
- o Aestivation

Survival mechanisms in cold environment:

- o Fat deposits
- o Fur
- o Feathers
- o Vasoconstriction
- o Hibernation

16) **Write Short note on parts of ecosystem?**

An ecosystem consists of two major components

1. Biotic components
2. Abiotic components

The interactions between both these components constitutes an ecosystem.

Biotic components: Living components of an ecosystem 1. Producers : Green plants 2. Consumers: Animals 3. Decomposers: Bacteria and fungi

Abiotic components: Non living components of an ecosystem

Physical components: 1. Water 2. Light 3. Temperature 4. Wind 5. Air 6. Soil

Chemical components: 1. Oxygen 2. Carbon 3. Nitrogen 4. Phosphorus 5. Sulphur.

17) **What is the Strategy to protect ecosystem?**

18) **Define Coevolution?**

The evolution of ecologically related species is sometimes coordinated such that each species exerts a strong selective influence on the other. This is **Coevolution**. Coevolution may occur when species are competing for the same resource or during predator-prey interactions.

19) **Define Cryptic coloration?**

Cryptic coloration (L. crypticus, hidden) is a type of camouflage that occurs when an animal takes on color patterns in its environment to prevent the animal from being seen by other animals.

20) **Difference between western and eastern meadowlarks?**

They look identical almost but do not interbreed with each other thus they are separated species according to this definition. The Western meadowlark (left) and the Eastern meadowlark (right) appear to be identical, and their ranges overlap, but their distinct songs prevent interbreeding.

21) **Write the name of insects which feed on male flower nectar?**

honeybees, caterpillars, butterflies, & other insects feed on a male flower's nectar, picking up pollen in the process, & then pollinating female flowers when they feed on them.

22) **Difference between direct and indirect exploitation?**

Direct exploitation: Direct exploitation ranges from commercial activities such as logging operations or trade in endangered species to subsistence hunting.

Indirect exploitation: Indirect exploitation encompasses the unintentional mortality of non target species such as fish or turtles killed as by-catch in fishery operations. Both endanger species around the world.

23) **Write two taxonomic group of slime molds?**

Slime molds are divided in two taxonomic groups,

1. Cellular slime molds (Phylum Acrasiomycota)
2. Plasmodial slime molds (Phylum Myxomycota)

24) **Difference between population meta population**

Metapopulation: A group of populations of same species which are separated by space. Individuals can move from one population to other. Extinction and colonization are the main process that regulate the Metapopulation.

Group of different species in an ecosystem is called population

25) **Define ectotherm and write its characteristics?**

Ectotherms: Organisms that control their body temperature by means of external source. They are on the mercy of environmental temperature. Their body temperature fluctuates with respect to external environmental temperature.

Characteristics of Ectotherms: ☐ Low metabolic rate ☐ Generate body heat from external environment ☐ **Body insulation is very poor**

26) **Define chemical warfare and its example**

Chemical warfare: Chemical warfare is another common strategy to escape from predators. Chemical warfare refers to use of chemical substance as a weapon for

defence purpose. Some predators use chemical warfare to attack their prey. For example, spiders and poisonous snakes use venom to paralyze their prey & to deter their predators.

27) Name the five groups of kingdom protista?

1. Aquatic habitat 2. Unicellular eukaryotes 3. Flagella or cilia 4. Cyst formation 5. Autotrophic or heterotrophic

28) What is After effect of removal of forests?

Effects of deforestation: o Increase in CO₂ conc. in the atmosphere. o Habitat destruction. o Climate change. o Loss of biodiversity. o Hydrologic cycle disturbances. o Soil erosion. o Desertification.

Reforestation is the process of restoring a forest that once existed but was removed at some point of time in the past. It is basically a rehabilitation process of forests. Reforestation may occur naturally in a deforested area. However, we can speed it up by planting trees with due consideration to biodiversity that earlier existed in area.

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