



CHEMISTRY DEPARTMENT

UNIT – I

Environment, Ecosystem and Biodiversity

PART – A

1. What is environment? (A.U. Apl/May 2007) -5 times

It is defined as the sum of total of water, air and land inter-relationships among themselves and also with the human beings, other living organisms and property.

2. What is the meaning of environmental science? (A.U. Apl/May 2009) -2

It is the study of the environmental its biotic and abiotic components and their inter relationships.

3. What is environmental engineering? (A.U. Apl/May 2008) -2

The application of the environmental principles to the protection and enhancement quality of environment and protection of public health and welfare.

4. What are the important components of environment? (A.U. Apl/May 2012) -2

- i) ABiotic or non-living components
- ii) Biotic or living components
- iii) Energy components

5. Define biosphere? (A.U. Apl/May 2011) -5

The part of lithosphere, hydrosphere and atmosphere in which living organisms live and interact with one another is called biosphere.

6. Mention the scope of environmental studies? (A.U. Apl/May 2007) -2



- To know the necessity of conservation of natural resources.
- To motivate the public and active participation in environmental protection.
- To develop skills for identifying and solving environmental problems.
- To get an awareness and sensitivity to the total environment related problems

7 What is ecosystem and ecology? (A.U. Apl/May 2011) -3

Ecology is the study of interactions among organisms in their natural home interacting with their surroundings. i.e the study of ecosystem.

An ecosystem is a group of biotic communities of species interacting with one another and with their non living environment exchanging energy and matter.

8. What are the components of an ecosystem? (A.U. Dec 2011) -1

- i) Abiotic - non living ii) Biotic-living.

9. How are biotic components grouped?

- i) Producers ii) consumers ii) decomposers.

10. What are nutrient cycles?

The cyclic flow of nutrients between the biotic and abiotic components is known as nutrient cycle or biogeochemical cycle.

11. What are ecological successions?

The progressive replacement of one community by another till the development of stable community in a particular area is called ecological successions.

12. What are food chains and food webs? (A.U. Apl/May 2011) -3

- The sequence of eating and being eaten in an ecosystem is known as food chain.
- The interlocking pattern of various food chains in an ecosystem is known as food web

13. What are ecological pyramids?

Graphical representation of structure and function of trophic levels of an ecosystem starting with producers at the base and each successive trophic level forming the apex is known as ecological pyramids

14. What is trophic structure?

The various steps through which food energy passes in an ecosystem is called as trophic structure.



15. What do you mean by producer? Give example?

Producers are synthesis their food themselves through photosynthesis or chemosynthesis.
eg. Green plants.

16. What are consumers? How are they classified? (A.U. Apl/May 2011) -1

All organisms which get their food by feeding upon other organism are called consumers.

- Primary consumers (Herbivores) depend on green plants.
- Secondary consumers (Carnivores) – They depend primary consumers for their food.
- Tertiary consumers-they depend on secondary consumers.
- Omnivores- both plant and animal eaters.

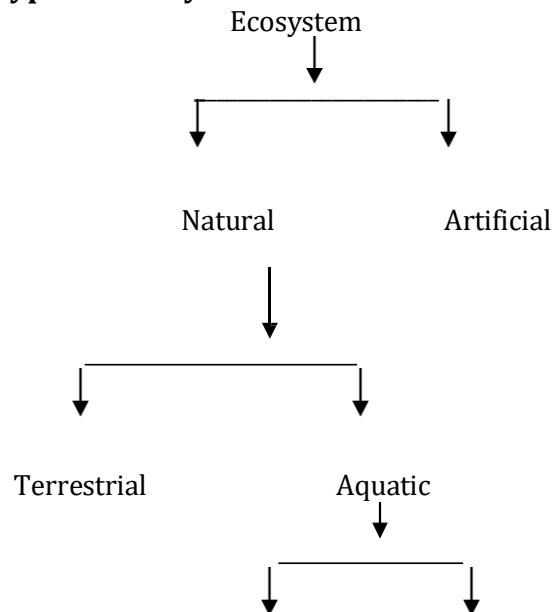
17. What do you mean by photoautotroph's and chemoautotroph's?

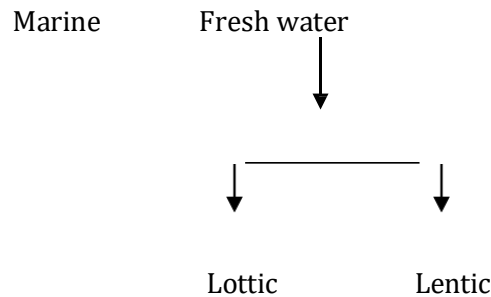
Microorganisms produce organic matter themselves by using CO₂ in air and sunlight through photosynthesis is called photoautotroph's.

Microorganisms also produce organic matter to some extend through oxidation of certain chemical in absence of sunlight is known as chemoautotroph's.

18. Give the types of ecosystem?

(A.U. Apl/May 2010) -2





13. Give the various zones in Lake Ecosystem?

- i) Littoral zone ii) Limnetic zone iii) Profundal zone

19. What do you mean by thermocline?

The warm top layer in lake is called epilimnion and bottom cold, viscous and non circulating layer is called hypolimnion in between these two layers is called thermocline.

20. Give the names of different types of lakes?

- i) oligotrophic lakes ii) eutrophic lakes iii) dystrophic lakes iv) endemic lakes v) desert lakes vi) volcanic lakes vi) meromictic lakes.

21. Write a note on estuarine ecosystem?

It is a partially enclosed coastal area at the mouth of river i.e. fresh water and salt water meet, it is a transition zone affected by tidal action.

22. Define Biomass?

(A.U. Apl/May 2012) -3

Biomass is the organic matter produced by the plants or animals which include wood crop residues; cattle dung manure, savage agricultural waste

23. What are the functional attributes of ecosystem?

- i) Biological diversity ii) primary and secondary production iii) food chain iv) energy flow v) material cycling.

24. What are the various zones in ocean?

- i) Coastal zone ii) open sea (euphotic zone, bathyl zone and abyssal zone).



25. Define Biodiversity? Give its significance? (A.U. Apl/May 2011) -2

It is defined as the variety and variability among all groups of living organisms and the ecosystem, in which they occur.

Significance:

Biodiversity is very important for human life. Loss of biodiversity has serious economic and social cost for any country. It protects the fresh air, clean water and productive land.

26. What are the types of biodiversity?

i) Genetic biodiversity ii) Species biodiversity iii) Ecosystem Biodiversity.

27. What are Hot spots? Name the two hot spots which are found in India?

The hot spots are the geographical areas which possess the high endemic species. i.e. minimum 0.55 species as endemic. The two hot spots are

i) Eastern Himalaya ii) Western Ghats.

28. What do you mean by point richness? (A.U. Dec. 2018) -3

Point richness refers number of species that can be found at a single point in a given space.

29. Explain endemic, endanger, vulnerable and extinct species?(A.U. Apl/May 2011) -3

Endemic: A species that can be restricted in a particular area is called endemic species.

Endanger: A species is said to be endangered when its number has been reduced to a critical level. Unless it is protected and conserved, it is immediate danger of extinction.

Vulnerable: A species is said to be vulnerable, when its population is facing continuous decline due to habitat destruction.

Extinct: A species is said to be extinct, when it is not seen in the wild for 50 years at a stretch.

30. What is In-situ and Ex-situ? (A.U. Apl/May 2011) -2

In-situ: Production of fauna and flora within its natural habitats is called in-situ conservation.

Ex-situ: Production of fauna and flora outside the natural habitats is called ex-situ conservation.



31. What is red data book?

(.A.U. Dec. 2011) -1

IUCN- Publish red data book which includes the list of endangered species of plants and animals. If they are not protected are likely to become extinct in near future.

32. What do you mean by biogeographical classification of India?

A region with characteristic climate, biological water and land resources. Based on this India is classified as 10 zones.

33. List out the various uses of biodiversity?

(A.U. Apl/May 2011) -2

i) consumptive use ii) protective use iii) social value iv) ethical value v) optional value vi) non-consumptive value.

34. What are various threats to biodiversity? Or Enumerate human activities destroy the biodiversity?

i) Habitat loss ii) poaching iii) man and wild life conflicts iv) deforestation and over exploitation.

35. What is the need of biodiversity conservation? (A.U. Apl/May 2011) -1

- Biodiversity provides drugs, herbs, food and other important raw materials that can be derived from plant materials.
- Ensures the sustainable utilization of life supporting systems on earth.
- It provides immediate benefits to the society such as recreation and tourism.
- Biodiversity is must for healthy biosphere,

36. What is restoration of biodiversity?

Restoration of eco systems and biological community is an important method of reducing biodiversity loss. In this method species can be saved and the restoration techniques are based on the types of ecosystem.

PART – B



1. (a) What is an ecosystem? Describe the structure & function of various components of an ecosystem. **(A.U. Apl/May 2016) -4**
(b) Explain the various threats to biodiversity. **(A.U. Apl/May 2016) -4**
2. (a) Explain in detail about Nitrogen cycle. **(A.U. Apl/May 2016) -4**
(b) Describe the types, characteristics features, structure& function of
 - i). Forest ecosystem
 - ii). Aquatic ecosystem**(A.U. Dec. 2012) -3**
3. (a) Explain In-Situ & Ex-Situ Conservation of Biodiversity **(A.U. Apl/May 2016) -4**
(b) What is meant by value of biodiversity? Explain different values of biodiversity
4. Write briefly on
 - i) Ecological succession
 - ii) Energy flow through an ecosystem
 - iii) Hot spots of biodiversity**(A.U. Apl/May 2016) -4**
5. (a) What is the biodiversity what are the reasons for decline for biodiversity
(b) Write short notes on: Producers, Consumers and Decomposers