QUESTIONS and ANSWERS UNIT-1

- Q.1 What is ecosystem?
- Ans. Any unit that includes all of the organisms in a given area interacting with the physical environment so that a flow of energy leads to clearly defined trophic structure, biotic diversity and material cycles within the system is an ecosystem. For example fish tank.

Q.2 What are types of environment?

Ans. There are two types of environment. 1) Physical or Natural and 2) Human or Cultural.

Q.3 What are the types of Physical or Natural environment with examples?

Ans. Physical or Natural environment are divided in to two types i) Biotic (e.g. Plant and animal) and ii) Abiotic environment(e.g. rock ,atmosphere).

- Q.4. Name the types of ecosystem.

Ans. There are various types of ecosystems. For example: Marine Ecosystem, Terrestrial Ecosystem.

Q.5. What is photosynthesis?

Ans. Process by which plants or primary producers convert light energy into chemical energy or carbohydrates is called photosynthesis.

Q.6.Give examples of biogeochemical cycles.

Ans. Water cycle, oxygen cycle carbon cycle.

- Q.7.Define food chain and food web.

Simple process by which food is transferred from one living species to an another is called food chain, e.g.

Grass → Goat → Tiger

Complex process by which food is transferred from one living species to an another is called food web, e.g.

Grass → Goat → Grasshopper → Bird → Snake → Eagle → Tiger
Fox

- Q.8 What is evapotranspiration?
- Release of water in the atmosphere by plants is known as evapotranspiration.
- Q.9. What is runoff ?
- Surface flow of water is called runoff.
- Q.10 What is trophic level ?
- Feeding level i.e. stage or level at which plants or animals get their food or feed other, is known as trophic level.

- Q.11. Name primary producer.

- Plant is a primary producer.

- Q.12. Why plant is called primary producer ?

- Plant can produce food/energy or carbohydrate and supply the same to other living species, hence called primary producer. Only plant can produce food/energy and others consume.

- Q.13. Who are herbivores?

- Grass eaters are known as herbivores. Example Cow/Deer

- Q.14. What are carnivores ?
- Flesh eaters are known as carnivores. Example: lion/tiger.
- Q.15.What is energy pyramid ?

Representation of trophic structure and function of an ecosystem graphically starting with producers at the base level followed by other trophic levels is known as ecological pyramid.

TOP CARNIVORES

CARNIVORES

HERBIVORES

PRIMARY PRODUCERS
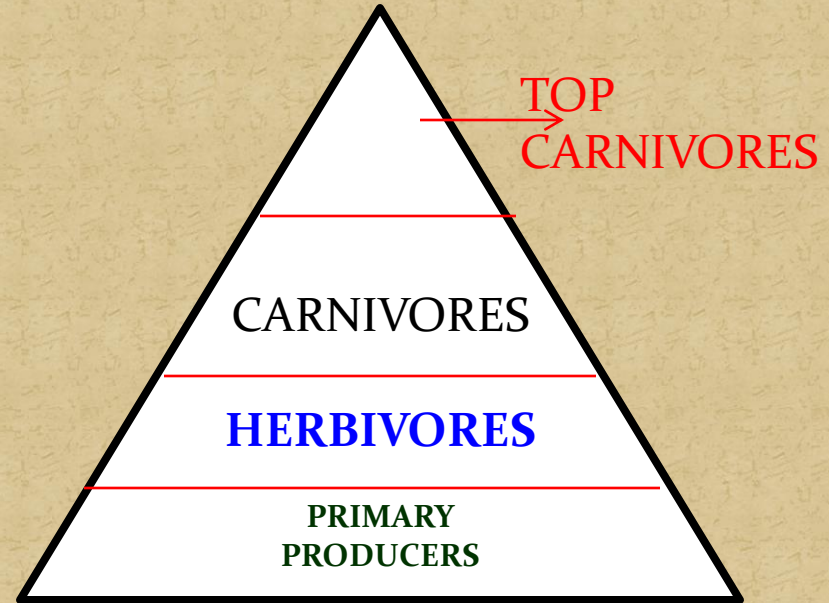
- Q.16 Draw energy cycle diagram.
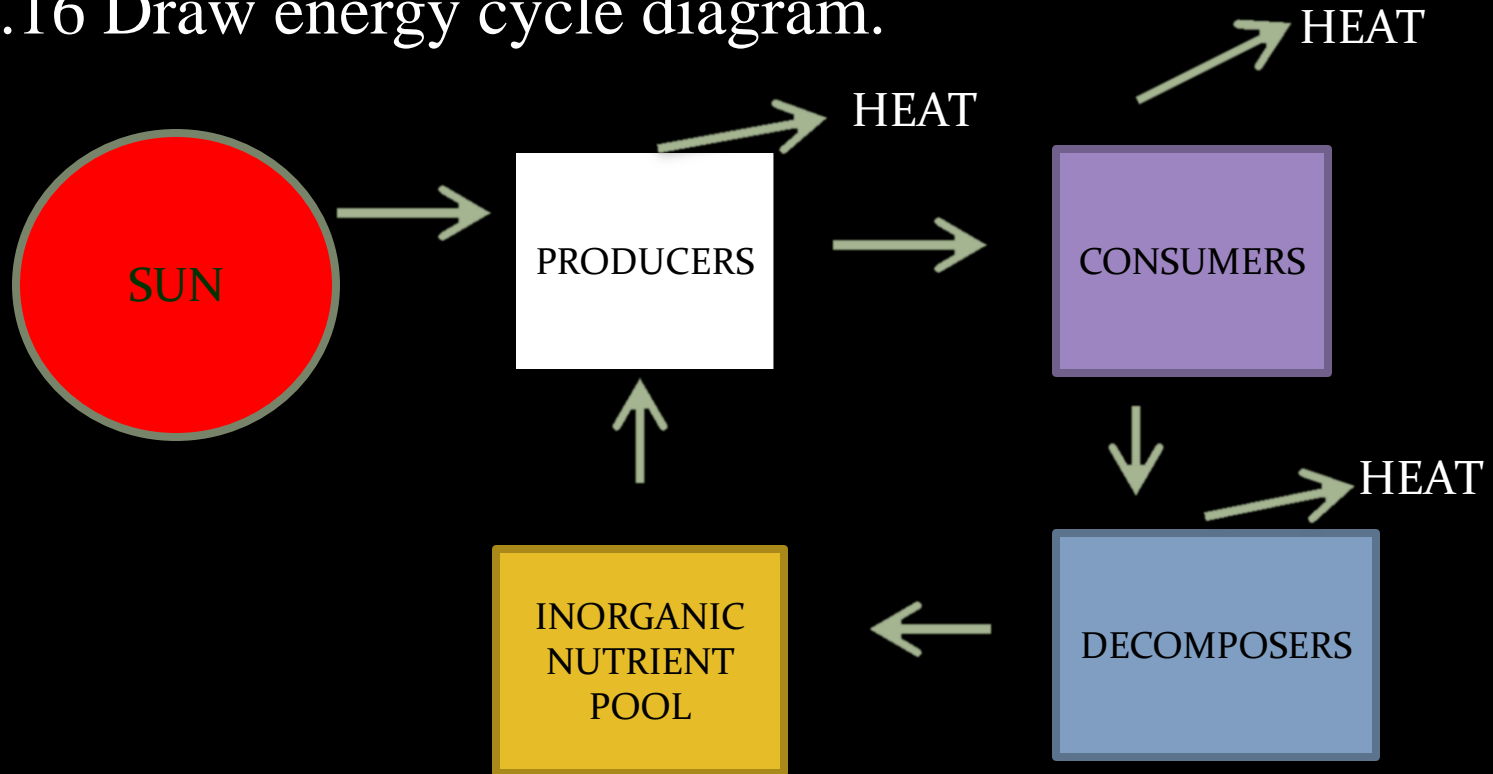
- Q.17 What is structure of ecosystem ?

Ecosystem is consisting of the following:

i) PRODUCERS: or AUTOTROPHS i.e. plants.

ii) HETEROTROPHS: or CONSUMERS

    a) Herbivores- grass eaters

    b) Carnivores-flesh eaters

iii) DETRIVORES: or DECOMPOSERS

- Q.18. What are the components of abiotic environment ?

i) Location, ii) size, iii) shape, iv) soil, v) minerals,

  vi) climate, viii) topography

Q.19 What is global warming ?

  It is the increase of the Earth's average surface temperature due to a build-up of greenhouse gases in the atmosphere.

Q.20. What is climate change ?

 is a broader term that refers to long-term changes in climate, including average temperature and precipitation.

- Q.21. What are greenhouse gases and draw diagram to explain greenhouse function of the earth ?

- Greenhouse gases are carbon dioxide, methane, water vapour and nitrox oxide.
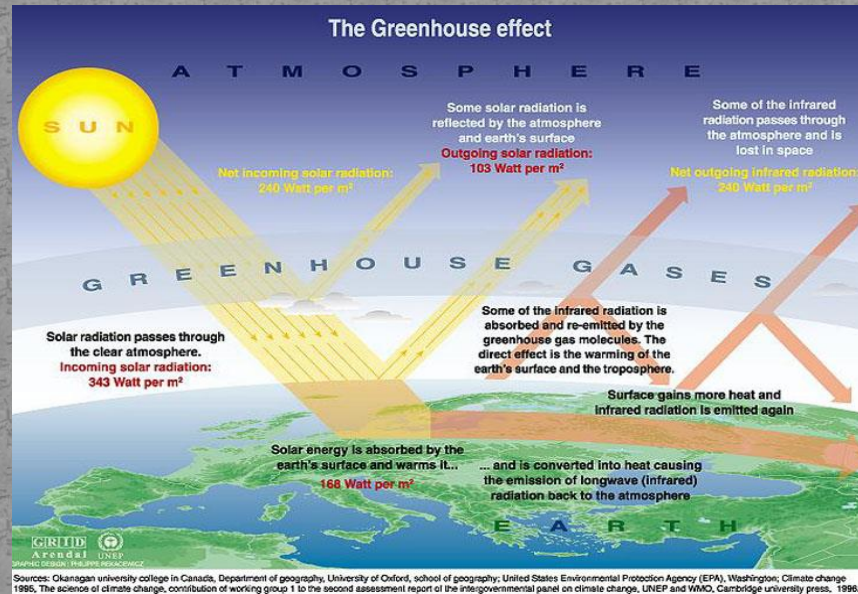
- Q.22 What are the causes of ozone depletion ?

- Following are the causes of ozone depletion :

- i) Chlorofluoro carbons (CFC's) and other halogenated hydrocarbons contribute to the destruction of stratospheric ozone.

- ii)Other harmful compounds include HCFCs, halons, methyl bromide, carbon tetrachloride, NO2, and methyl chloroform.

  iii) CFCs are used in refrigerators, home insulation, aerosols, plastic foam, and throwaway food containers.

- Q.23 Why is ozone important ?
- Ozone is important because
- i) it protects the Earth from ultraviolet rays emitted by the sun.

- ii) the wavelengths of ultraviolet radiation are absorbed by the ozone molecules.

- iii)Ozone depletion or ODS is the decay of the protecting ozone layer that filters out harmfull UV light. An ozone depleting substance can remain in the stratosphere for long periods, causing holes in the layer and allowing harmful UV rays to reach the earths surface.

- Q.24. What are the sources of CFCs ?

- Sources of CFCs are air conditioner, refrigerators, body and room spray, paints etc.

- Q.25. Name some of the common problems associated with ozone depletion.

- Some of the common problems are skin burn, skin cancer, blindness, limit the plant growth and cataract.

- Q.26. How to control the ozone depletion ?

- Less or non use of CFCs gases. Use of CFCs free air conditioner, refrigerators, body and room spray, paints.

- Q.27 What is acid rain ?
- Acid rain is basically rain that has a higher than normal acid level (low pH).
- Q.28. How is acid rain produced ?
- Acid gases are produced when fossil fuels like coal and oil are burned in power stations, factories and in our own homes. Most of these acid gases are blown into the sky, and when they mix with the clouds it can cause rain - or snow, sleet, fog, mist or hail - to become more acidic.

- Q.29. Name the gases that cause acid rain?
- Following gases cause acid rains:
- burning coal, oil and natural gas in power stations makes electricity, giving off **sulphur dioxide gas**.
- burning petrol and oil in vehicle engines gives off **nitrogen oxides** as gases.
- These gases mix with water vapour and rainwater in the atmosphere producing weak solutions of sulphuric and nitric acids – which fall as acid rain.

- Q.30. What are the problems associated with acid rain ?

Acid rain is an extremely destructive form of pollution, and the environment suffers from its effects. Forests, trees, lakes, animals, and plants suffer from acid rain. Trees can also suffer from stunted growth; and have damaged bark and leaves, which makes them vulnerable to weather, disease, and insects.

- Soil also gets polluted with acid rains and plants are affected seriously by this.

- Lakes are also damaged by acid rain. Fish die off, and that removes the main source of food for birds. Acid rain can even kill fish before they are born when the eggs are laid and come into contact with the acid.

- Fish usually die only when the acid level of a lake is high; when the acid level is lower, they can become sick, suffer stunted growth, or lose their ability to reproduce.

- Also, birds can die from eating "toxic" fish and insects.

Acid rain dissolves the stonework and mortar of buildings (especially those made out of sandstone or limestone).It reacts with the minerals in the stone to form a powdery substance that can be washed away by rain.

- Acid rain can travel long distances. Often it doesn't fall where the gas is produced. High chimneys disperse (spread) the gases and winds blow them great distances before they dissolve and fall to Earth as rain.

- Q.31. What is biodiversity ?

- Biodiversity is referred to biological diversity i.e. variety of life forms. There are various forms of life on the earth which is called biodiversity.

- Q.32. What are the types of biodiversity ?

- There are three types of biodiversity. They are :

- i) Ecosystem Diversity, ii) Species Diversity and iii) Genetic Diversity.

- Q.32. Define the following terms:

- i)Ecosystem Diversity, ii) Species Diversity and iii) Genetic Diversity.

- **Ecosystem diversity** refers to the diversity of a place at the level of ecosystems. The term differs from biodiversity which refers to variation in species rather than ecosystems. Ecosystem diversity can also refer to the variety of ecosystems present in a biosphere, the variety of species and ecological processes that occur in different physical settings.

- **Genetic diversity**, the level of biodiversity, refers to the total number of genetic characteristics in the genetic makeup of a species. It is distinguished from genetic variability, which describes the tendency of genetic characteristics to vary.

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- **Species diversity** is the effective number of different species that are represented in a collection of individuals (a dataset). The effective number of species refers to the number of equally-abundant species needed to obtain the same mean proportional species abundance as that observed in the dataset of interest (where all species may not be equally abundant). Species diversity consists of two components, species richness and species evenness.

- Q.33. What are the threats to biodiversity ?
- Biological diversity is under threat. These threat come from man in various ways. These are:

i) HABITAT DESTRUCTION: Deforestation, Land Reclaimation etc.

ii) POLLUTION: Land, Air, Water by man through his activities.

iii) GLOBAL CLIMATE CHANGE:Variation in Temperature, Rainfall etc.

iv) EXPLOITATION:

v) SPECIES INTRODUCTION: Introduction of non-native plants e.g. TEA in India, has destroyed native vegetation in tea growing areas.

- Q.34. What CRZ stands for?

- CRZ stands Coastal Regulations Zone.

- Q.35. What is the definition of CRZ ?

- The coastal zone is defined as an area from the territorial waters limit (12 nautical miles) including its sea bed upto the landward boundary of the local self government abutting the sea coast.

- Q.36 Name some prohibited activities in the CRZ ?

- Certain activities are prohibited in CRZ, these are:

- 1) No new construction of buildings shall be permitted within 200m of HTL.
  2. Corals and sand from the beaches and coastal waters shall not be used for construction and purposes.

- 3.Construction activities in ecologically sensitive areas
  4. Dredging and underwater blasting in and around coral formations shall not be permitted.

- 5. Land reclamation, building or disturbing the natural course of sea water with similar observations, except those required for control of coastal erosion and maintenance or sandbars except tidal regulators, storm water recharge.

- 6.Mining of sand, rocks and other substrata materials not available outside CRZ areas.

- 7. Any construction between LTL and HTL except facilities for carrying treated effluents and waste discharges, oil, gas and similar pipelines and dressing or altering of sand dunes, hills natural features including landscape changes for beautification, recreational and other such purposes.

- Q.37.Are following statements TRUE or FALSE? If FALSE, write the correct statement.

- i)Food chain and food web both exist in the ecosystem.

- FALSE. Only food web exist in the ecosystem.

- ii) Biodiversity is found everywhere in the world.

- FALSE. Biodiversity is found only in certain places in the world.

- iii) Ozone is affected by chloroflurocarbons.

- TRUE.

- iv) Energy can be created.

- FALSE. Energy cannot be created.

- v) Plants can only carryout photosynthesis.

 FALSE. About 99.99% of photosynthesis is produced by plants. Some micro organisms like **blue algae** can also carryout photosynthesis.

vi) Sun is the one and only source of energy to the earth.

 TRUE.

Q.38. Fill in the blanks:

 i) On an average _____% of light energy is received by the earth.

                    45%

 ii) _____ light is most important to the earth.

          WHITE

- iii) Herbivores are also known as _____.

  (Secondary consumers/tertiary consumers)

iv) _____ are animals which can eat both plants and animals.

(carnivores/ herbivores/ omnivores)

v) _____ is one cause of threat to biodiversity.

(Habitat destruction/Fishing/Construction of building)

vi) Acid rain is common in _____.(India/

Australia/Pakistan/Europe).

MATCH THE COLUMN

A	B	B
1. Environment	A) Global Warming	K) Dynamic system
2. Human settlement	B) Greenhouse gas	F) Cultural environment
3. CFCs	C) Decomposers	G) Ozone depletion
4. Methane	D) Physical environment	B) Greenhouse gas
5. Runoff	E) Threat to biodiversity	J) Water cycle
6. Lion	F) Cultural environment	H) Top carnivore
7. Detrivores	G) Ozone depletion	C) Decomposers
8. Power Industry	H) Top carnivore	L) Acid rain
9. Carbon dioxide	I) Secondary consumer	A) Global Warming
10. Forest	J) Water cycle	D) Physical environment
11. Pollution	K) Dynamic system	E) Threat to biodiversity
	L) Acid rain	