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.

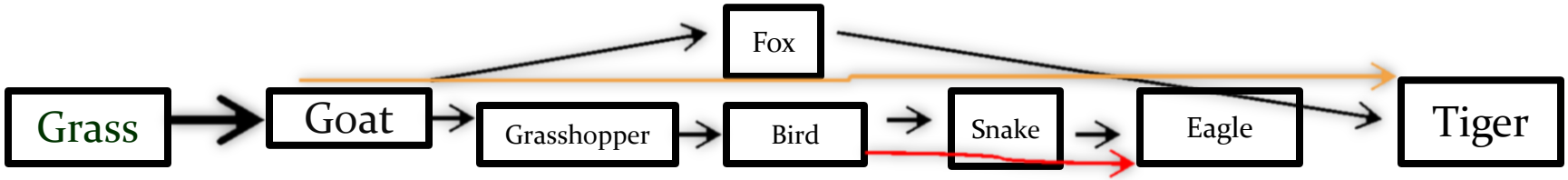
Q.6.Give examples of biogeochemical cycles.

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.

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

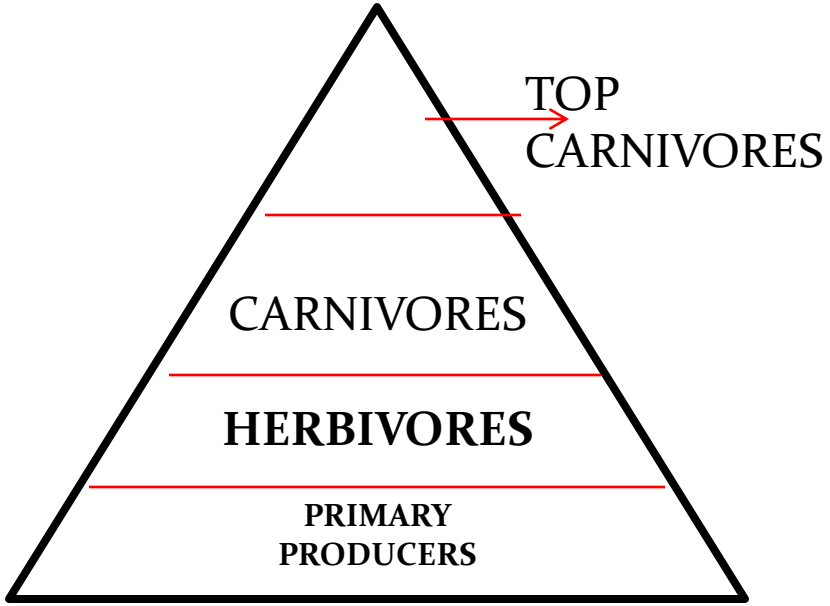


- Q.8 What is evapotranspiration?
- Release of water in the atmosphere by plants is known as evapotranspiration.
- Q.9. What is runoff ?
- Surface flow of water is called runoff.
- Q.10 What is trophic level ?
- Feeding level i.e. stage or level at which plants or animals get their food or feed other,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

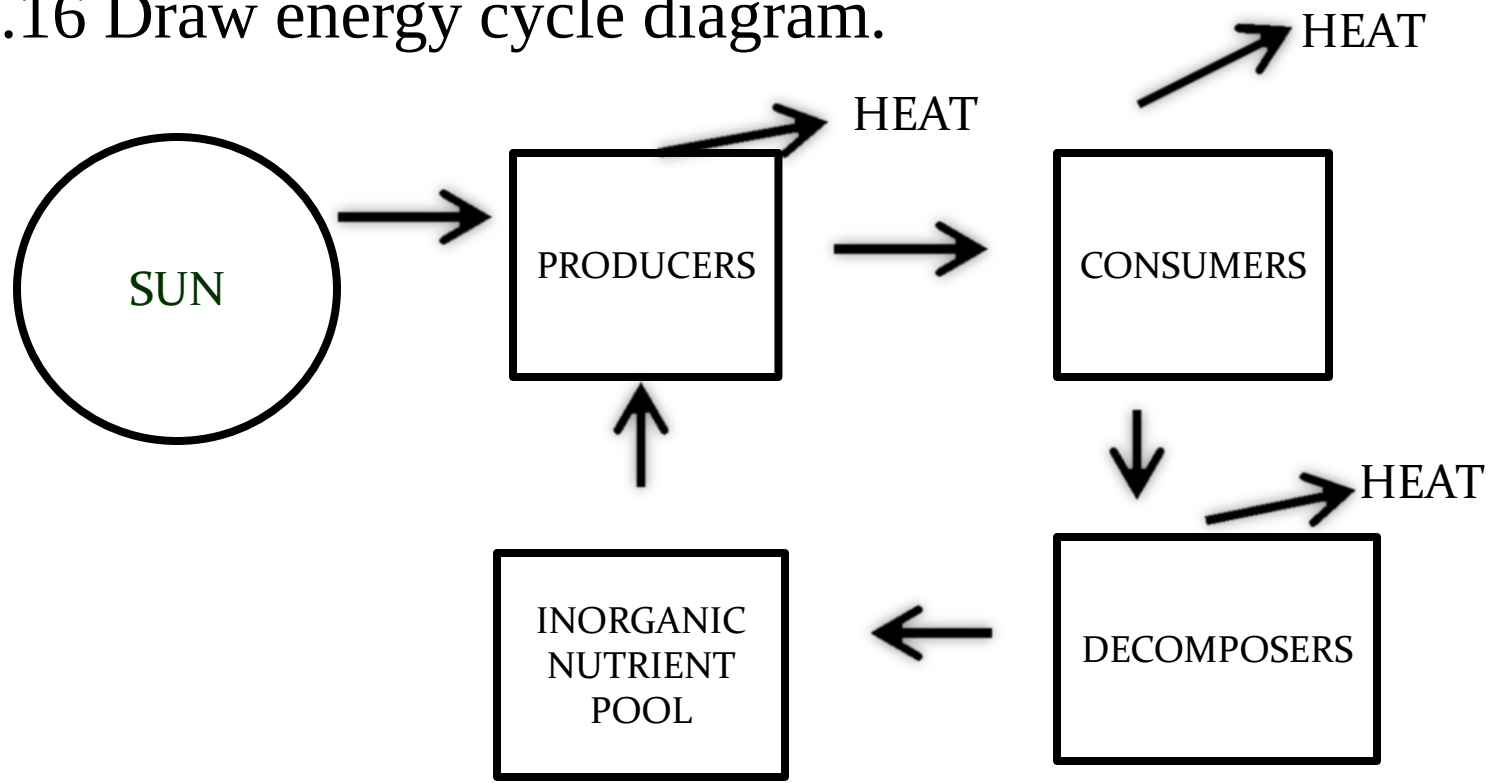
- Q.11. Name primary producer.
- Plant is a primary producer.
- Q.12. Why plant is called primary producer ?
- Plant can produce food/energy or carbohydrate and supply the same to other living species, hence called primary producer. Only plant can produce food/energy and others consume.
- Q.13. Who are 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.



- 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

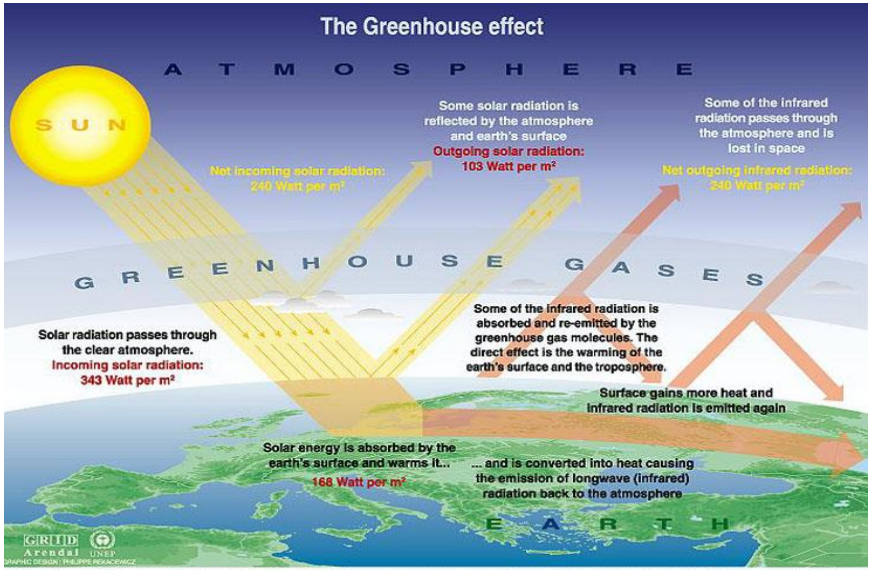
Q.19 What is global warming ?

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.



Sources: Okanagan university college in Canada, Department of geography, University of Oxford, school of geography; United States Environmental Protection Agency (EPA), Washington; Climate change 1995, The science of climate change, contribution of working group 1 to the second assessment report of the intergovernmental panel on climate change, UNEP and WMO, Cambridge university press, 1996.

- 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.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.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	