DPP
DAILY PRACTICE PROBLEMS

Class : XIIth
Date :

Solutions

Subject : BIOLOGY
DPP No. : 3

Topic :- Ecosystem

1 **(d)**

The organisms, which attack dead animals are the present at end of food chain and known as decomposers. Decomposers are heterotrophic organisms, mostly bacteria and fungi, which lives on dead organic matter or detritus. They release different enzymes from their bodies into the dead and decaying plant and animal remains, leading to the release of simple inorganic substances. Thus, they play an important role in the cycling of minerals

2 **(a)**

Pyramid of energy is a graphic representation of the amount of energy trapped per unit time and area in different trophic levels of a food chain with producers forming the base and top carnivores the top. The pyramid of energy is **always upright**.

3 **(d)**

There is some sort of relationship between the number, biomass and energy contents of the producers and consumers of different orders in any ecosystem. These relationships, when represented in diagrammatic ways are called ecological pyramids. The concept of pyramid was proposed by Charles Elton (1927) so, they are also called as Eltonian pyramids

4 **(c)**

The formula of ecological efficiency is

$$= \frac{\text{Energy in biomass production at a trophic level}}{\text{Energy in biomass prodcution at prevense trophic level}}$$

We know that plant (producers) convent the photo energy into chemical energy and according

to Lindman rule of energy transfer only 1% of energy will be transferred from one trophic level to other trophic level
So according to the formula of ecological efficiency primary consumer will have less ecological efficiency then secondary consumers because energy in biomass be production at first tropical level (*i.e.,* producers level) will more while ecological efficiency of secondary consumer will be high then primary consumer because in secondary consumer the energy produced in biomass at previous tropical level will be less then producer level

5 **(c)**
In tree ecosystem, the pyramid of number is inverted because only one tree has many consumers like birds, insects, etc.

While in pond, desert and forest ecosystem, the pyramids of numbers are upright because producers are large in number.

6 **(c)**
Producers → Primary consumers → Secondary consumers
(Grass) (Zebra) (Lion)

7 **(a)**

Ecosystem	Shape of Pyramid
Pyramid of number	
Grassland	Upright
Forest (tree)	Inverted
Aquatic (pond)	Upright
Pyramid of biomass	
Grassland	Upright
Forest	Upright
Aquatic (lake)	Inverted
Pyramid of energy	
All ecosystems	Upright

8 **(a)**
The process by which humus is further degraded by some microbes to release inorganic nutrients

is called mineralisation

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10 **(d)**

Halophytes (*i.e.,* plants growing in saline soils) show the characteristics of xerophytes, *e.g., Sueda, Tamarix, Atriplex*, etc. These characters include succulence, thick cuticle, sunken stomata, high osmotic pressure, presence of anthocyanin, tannins, proline and other organic solutes, well developed root system etc.

11 **(a)**

Secondary succession or subsere is ecological succession that takes place in a recently denuded area which still contains a lot of organic debris, remains and propagules of previous living organisms. It is more common and caused by baring of an area due to forest fires, deforestation, excessive overgrazing, landslides, earthquakes, repeated floods, etc. only 50 to 100 years are required for establishment of a grassland over a recently denuded area. Formation of forest requires 100 to 200 years.

12 **(c)**

Phytoplanktons are found in **littoral zone**, which is shallow water region.

13 **(d)**

A primary consumers or herbivores are animals which feed on plants or plant products, *e.g.*, grasshoppers and several other insects, rabbit, hare, field mouse, deer, antelope, cow, elephant, zooplankton, tadpoles and some fishes

14 **(d)**

Burning of wood, forest fire, volcanic activity and combustion of organic matter and fossil fuels area are some essential sources for releasing CO_2 in the atmosphere

16 **(d)**

There are certain limitations of ecological

pyramids, they are

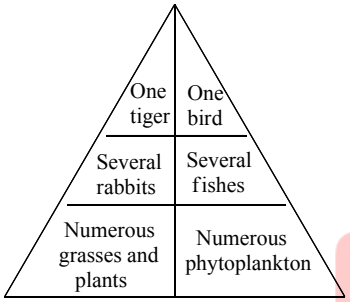
(i) It do not take into account the same species belonging to two or more trophic levels

(ii) It assumes a simple food chain, whereas in nature it does not exist

(iii) Saprophytes/decomposers are not given any place in ecological pyramids

17 **(d)**

The pyramid of energy is always upright whatever will be the case. It represents the total amount of energy utilised by different level organisms in unit area over a period of time



Pyramid of energy

18 **(b)**

A good example of succession is the hydrarch succession or hydrosere succession, in which, a pond and its community are converted into a land community. In their reed swamp stage, amphibious plants grow where the water body becomes shallow (0.3-1.0 m), *e.g.,Sagittaria*.

Juncus shows sedge-medow stage, *Salix* shows woodland stage, while *Trapa* shows rooted-floating stage.

19 **(a)**

The rate of formation of new organic matter by consumers is called secondary productivity

20 **(c)**

Food web is a network of food chains, interconnected at various trophic levels, so as to form a number of feeding alternatives amongst the different organisms of a biotic community.

ANSWER-KEY

Q.	1	2	3	4	5	6	7	8	9	10
A.	D	A	D	C	C	C	A	A	A	D
Q.	11	12	13	14	15	16	17	18	19	20
A.	A	C	D	D	A	D	D	B	A	C