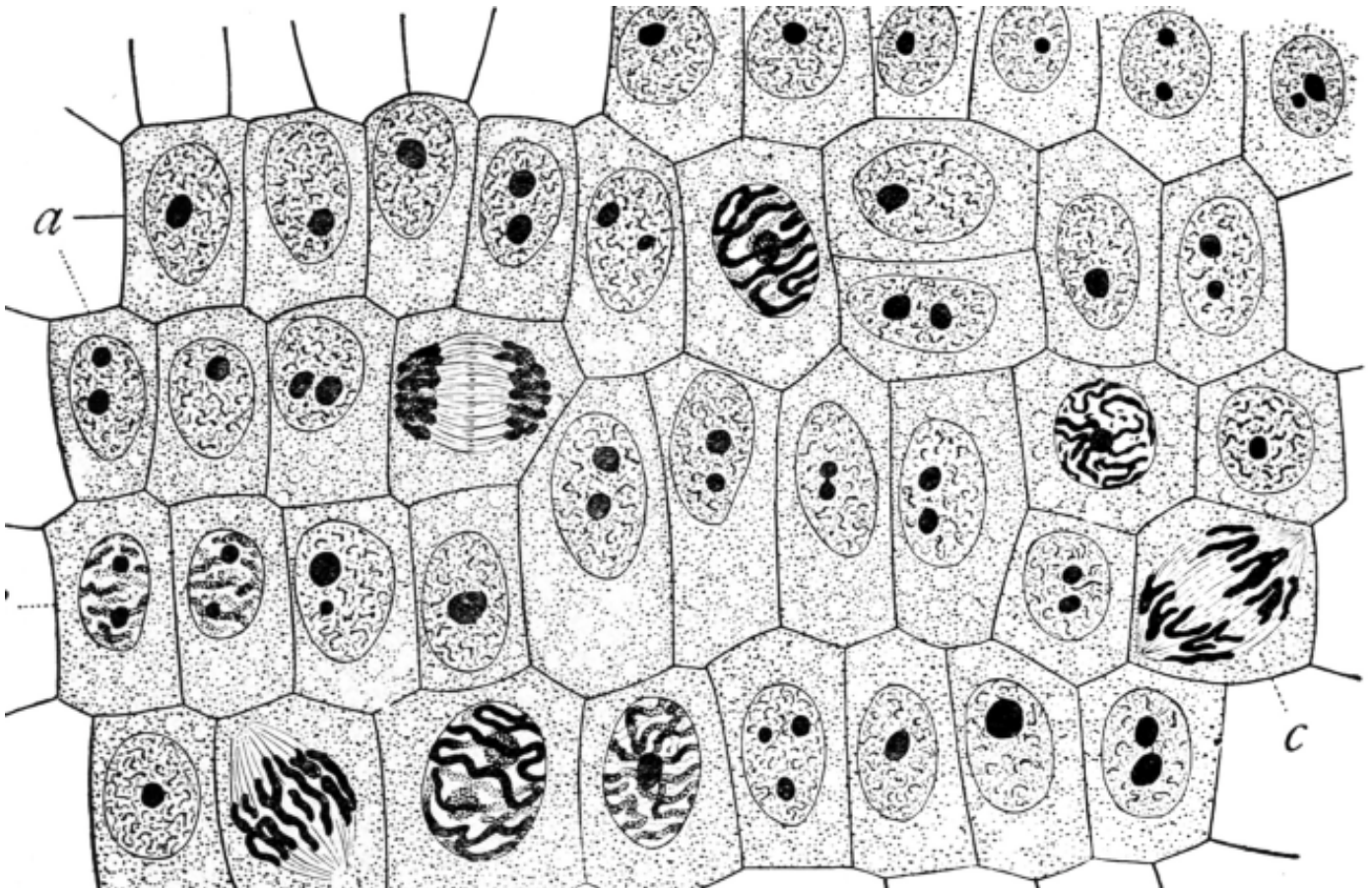


# BOLPUR COLLEGE

UG sem-2

session:2021-2021

## Practical Examination - 2021



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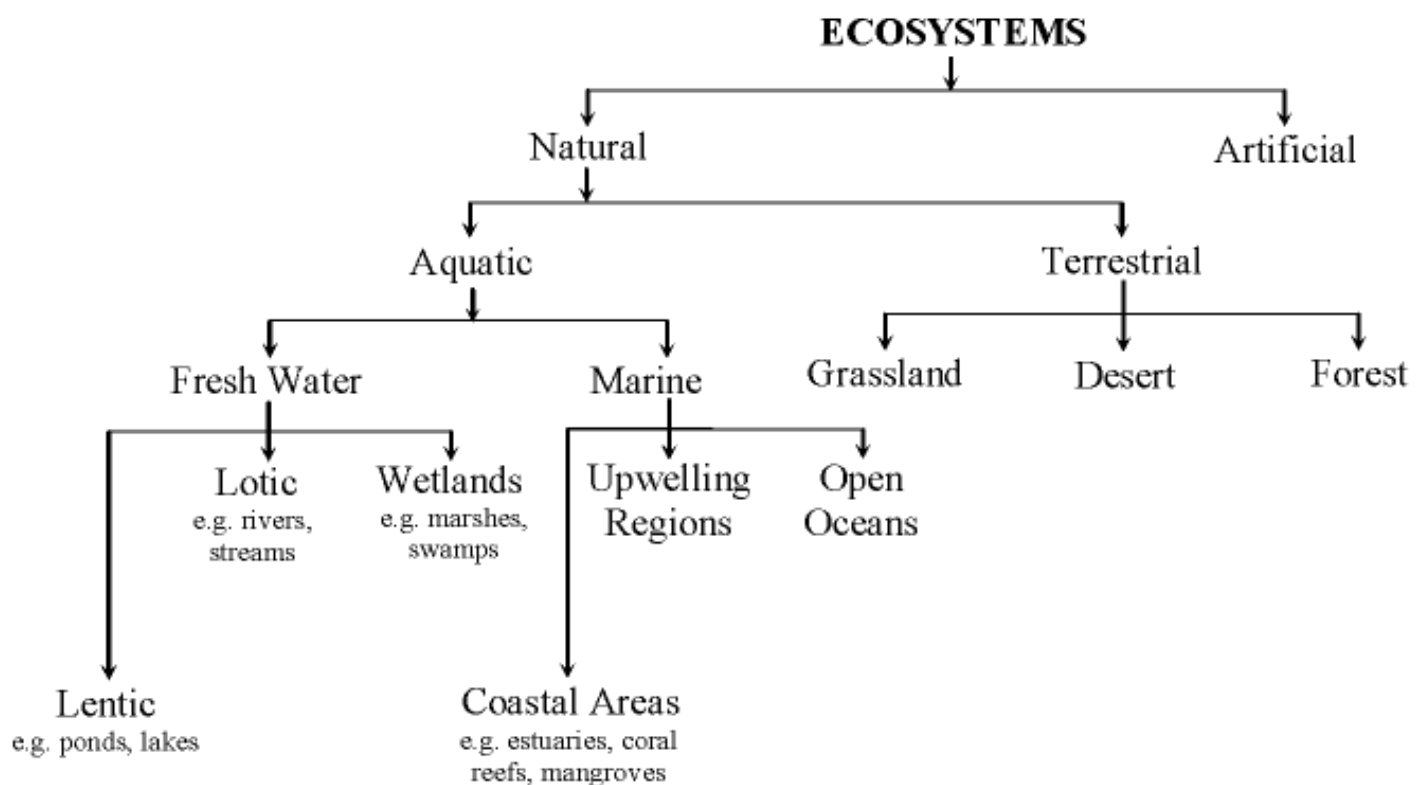
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Hons: Zoology

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# ECOSYSTEM

**An ecosystem is a community of living organisms in conjunction with the nonliving components of their environment, interacting as a system. These biotic and abiotic components are linked together through nutrient cycles and energy flows.**



**1. Why do you think that the root-tips of onion plant has been chosen as the preferred subject in order to demonstrate mitosis? Could it be replaced with any other parts?**

Ans:- It is because of the meristematic cells that are situated in the tip of the roots that render the most desirable and suitable raw material to study the different stages of mitosis. Onion is a monocot plant. Monocotyledonous plants possess large chromosomes that are clearly visible. Hence, their root tips are used.

No, it could not be replaced with any other parts.

**2. Meiotic cell division is an universal phenomenon in all kind of gametogenic organs, still preferably male grasshoppers are used to study/ demonstrate the phenomenon. Why so?**

Ans:- The grasshoppers are ideal materials to study various meiotic stages of spermatogenesis due to their easy availability, fairly large chromosomes, and fewer numbers of chromosomes. It is easy to make temporary squash preparation of grasshopper testes.

**3. Barr-bodies are inactivated 'X'-chromosomes found only in females. What do you think the status of the barr-body will be in case of**

- people with Klinefelter syndrome
- people with a 47, XXX karyotype.

Ans:-

- XXY male (Klinefelter syndrome): one barr body.
- 47XXX individual: two barr body.

**4. Which characteristic property is of cells is exploited in studying the viability of cells using dyes (e.g. Trypan blue or Hoechst)?**

Ans:- Trypan blue is a stain used to quantify live cells by labeling dead cells exclusively. Because live cells have an intact cell membrane, trypan blue cannot penetrate the cell membrane of live cells and enter the cytoplasm. In a dead cell, trypan blue passes through the porous cell membrane and enters the cytoplasm.



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# GRAZING FOOD CHAIN

Grazing food chain is a type of food chain in which energy at the lowest trophic level is acquired via photosynthesis. The grazing food chain begins with producers like green plants, who create their own food through the process of photosynthesis and later move from herbivores to carnivores.

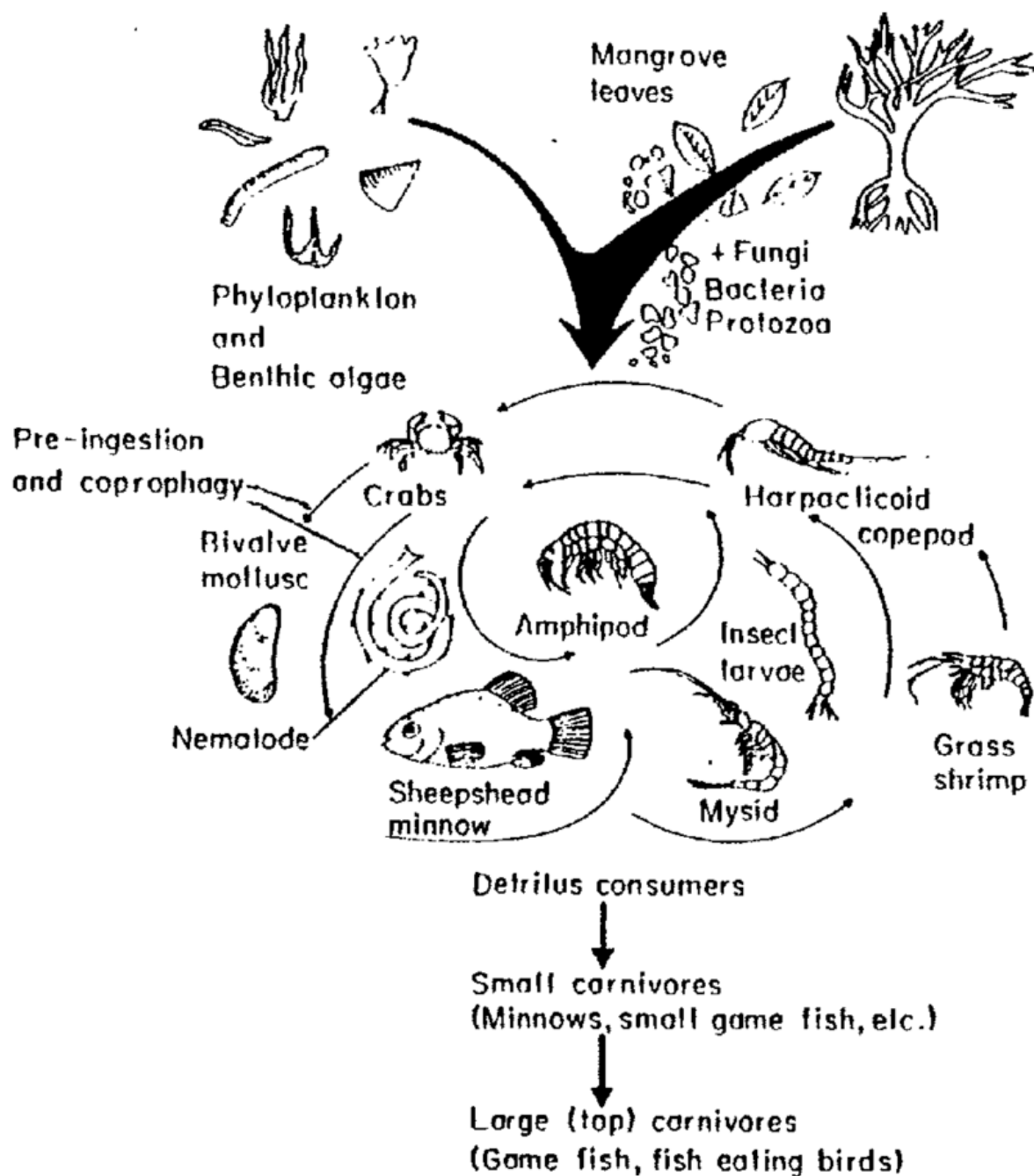
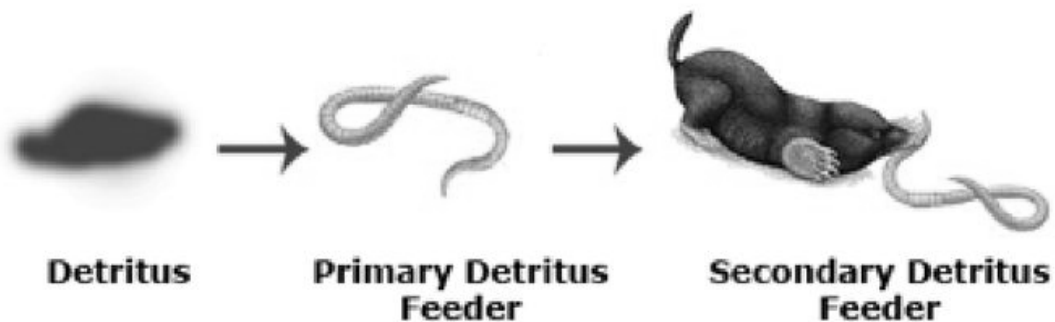


Fig :- grazing food chain

# DETRITUS FOOD CHAIN

Detritus food chain is the type of food chain that starts with dead organic materials. The dead organic substances are decomposed by microorganisms. The organisms that feed on dead organic matter or detritus, are known as detritivores or decomposers. These detritivores are later eaten by predators.

Detrital Food Chain: dead organic matter → soil microbes → earthworms



## LINEAR FOOD CHAIN

It is a linear sequent of organisms in which nutrients and energy travel as one organism and eats another.

"Various trophic levels" defined by how many energy transfers separate it from the basic input of the chain.

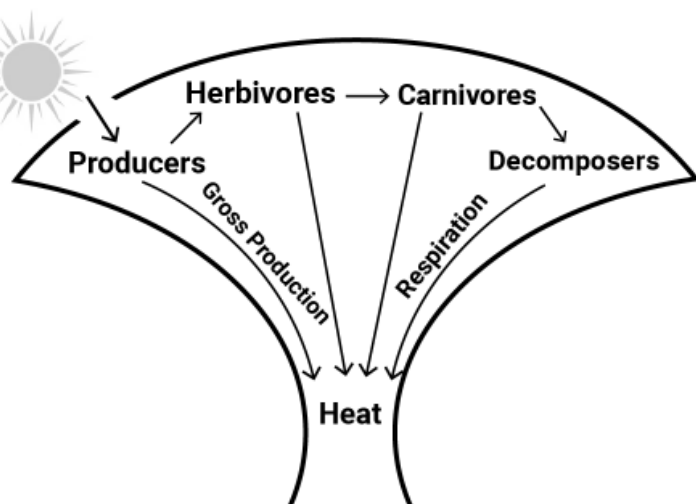
This inefficiency limits the length of food chains.

## Y-SHAPED FOOD CHAIN

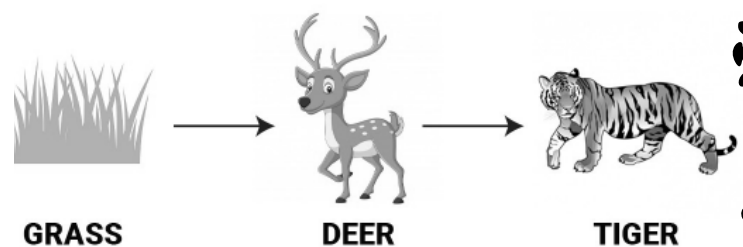
Y-shaped model of the flow of "energy in ecosystems".

Considering a single food chain the energy traveled by either grazing is termed as a single-chain model.

The lower food chain of "plant—>termite—>aardvark" is a part of the "grazing food chain".



Y-Shaped or Double Channel Energy Flow Model

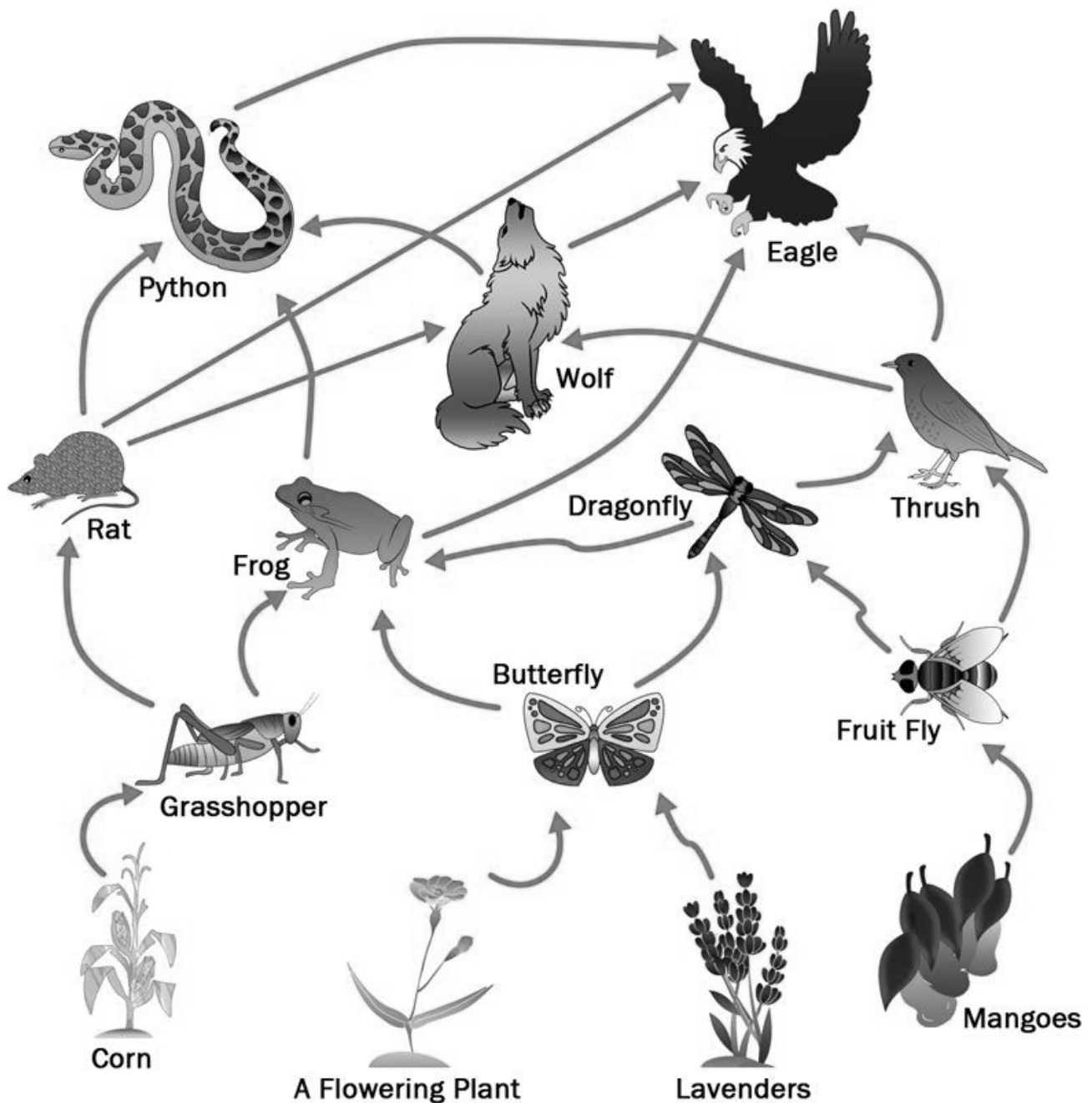


Linear food chain

# FOOD WAVE

A food web (or food cycle) is the natural interconnection of food chains and a graphical representation (usually an image) of what-eats-what in an ecological community. Another name for food web is consumer-resource system.

## A Food Web





# REFERENCE

All picture and study mettial are collected from bellow sorces

## Internet Links

- > <https://www.google.com/imghp>
- > <https://en.wikipedia.org>
- > <https://www.nationalgeographic.org>
- > <https://youmatter.world>

## Software Are Used

- > Sketch App
- > Gimp
- > Adobe pdf