

# CHAPTER:- "MAN & HIS ENVIRONMENT"

Notes

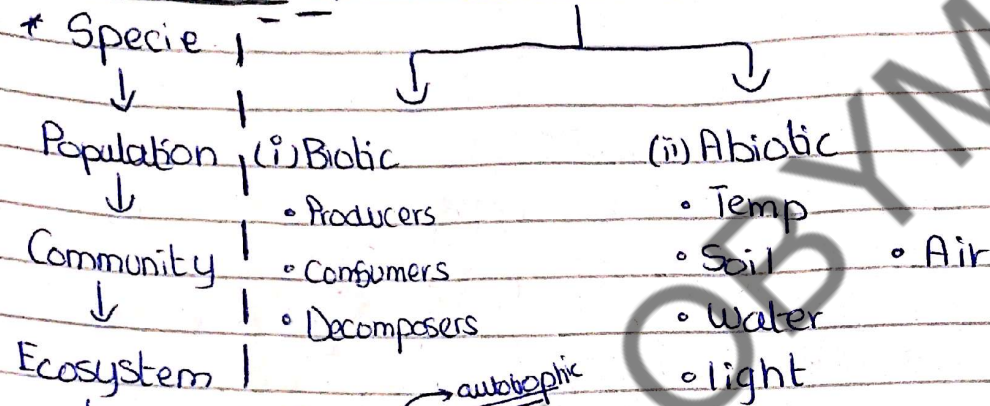
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## ECOSYSTEM

- surrounding of organism → environment
- study of environment → ecology

Ecology is also called environmental biology

## LEVELS OF ORGANIZATION | COMPONENTS OF ECOSYSTEM:



Biosphere | (i) Green plant & algae that prepare their own food.



**Consumers:** (i) cannot prepare their own food.

1. **Primary consumer:** feed on producers directly

e.g. cow, goat, giraffe etc.

2. **Secondary consumer:** feed on primary consumer

e.g. lion, snake, hawk etc.

• **Omnivores:** feed on both plant & animal.

e.g. Human beings, bears.



## Decomposers:-

- bacteria & fungi that release material in dead organism & waste material so they can be used again.

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## One Way Energy Flow:-

The passage of energy in one direction through ecosystem.

It is non-cyclic in nature.

e.g.

Tomato → caterpillar → small bird → hawks.

## Trophic Level

T1 - Producer

T2 - Primary consumer

T3 - Secondary C

T4 - Tertiary C

T5 - Decomposers

Q. Diff b/w Flow of Energy & Flow of Nutrient - Ans bk pg # 98 (box)

## FOOD CHAIN

Transfer of material from one organism to another



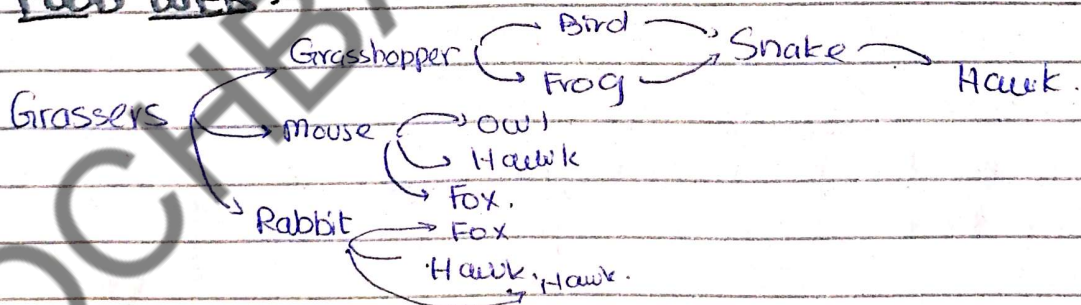
## FOOD WEB

all possible feeding relations in ecosystem.

## FOOD CHAIN:-

plant → mouse → snake → owl

## FOOD WEB:-



## ECOLOGICAL PYRAMID:-

(i) of Number

no of individuals per unit area

(ii) of biomass

total mass of group per unit area

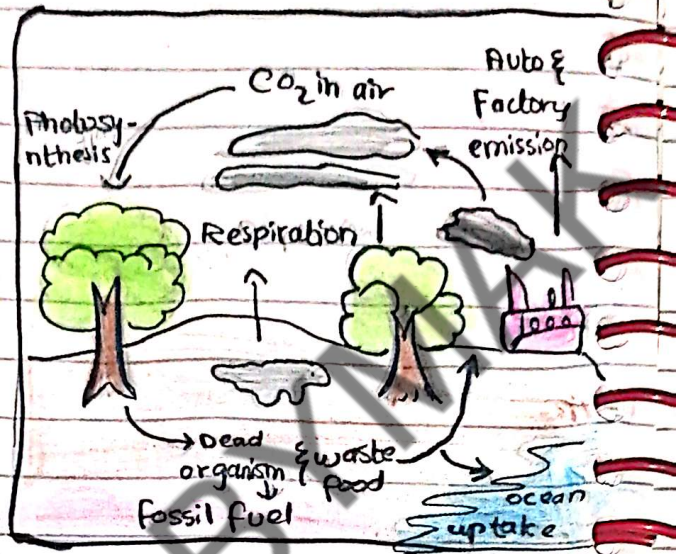


# " BIOGEOCHEMICAL CYCLE "

\*cyclic pathway by which essential items are circulated.

## - CARBON-CYCLE :

phenomena through which carbon is circulated b/w living & non-living.



## STEPS:-

- (i) Plant absorb CO<sub>2</sub>
- (ii) Carbon move from Plant to animal through food chain.
- (iii) CO<sub>2</sub> removed by respiration.
- (iv) After death, it decomposes & become fossil fuel.
- (v) Carbon enter environment when fossil fuel are burnt.
- (vi) CO<sub>2</sub> become dissolved in seawater & it is converted into CaCO<sub>3</sub>

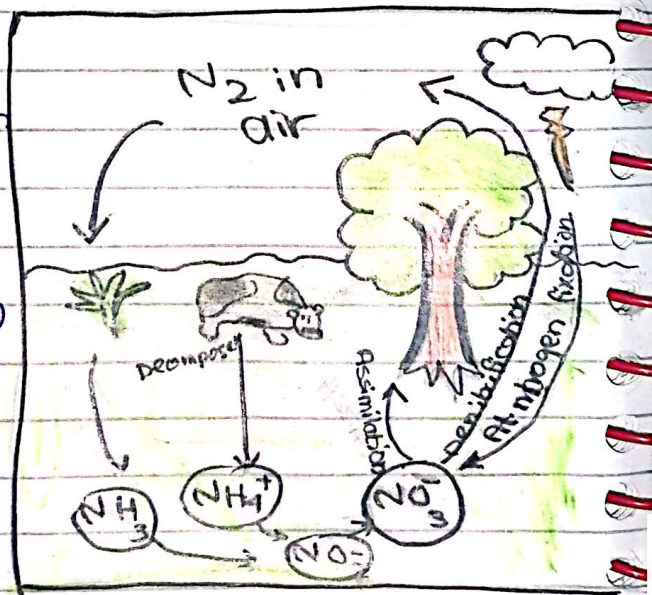


## Nitrogen Cycle :

• Phenomena through which nitrogen is circulated by living & non-living.

### STEPS:

1. Formation of nitrates (I)
  - a. Atmospheric nitrogen fixation
  - b. Biological nitrogen fixation
  - c. Industrial nitrogen fixation.
- Ammonification (II)
- Nitrification (III)
2. Assimilation.
3. Denitrification.



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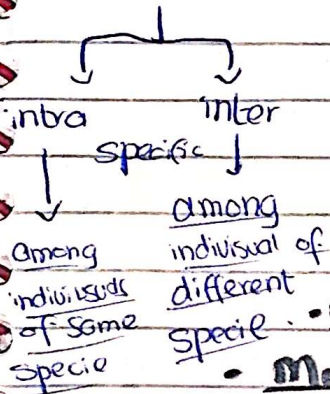
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# "INTERACTIONS IN ECOSYSTEM"

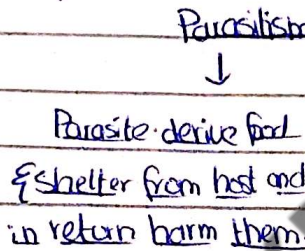
## (i) Competition

- both species have negative impact on each other.

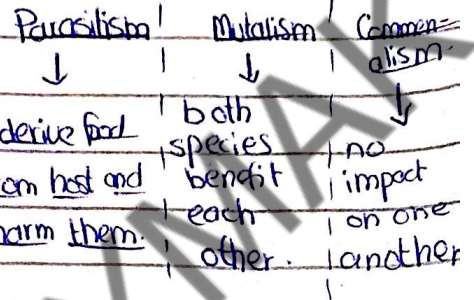


## (ii) Predation

- feeding of one organism upon another.



## (iii) Symbiosis



## Examples:-

- **Parasitism:** lice & human. |  $\odot$ : Diff b/w
- **Mutualism:** termite & Protocyan. | ecto & endo
- **Commensalism:** Sucker fish & shark. | parasite.

# "ENVIRONMENTAL PROBLEMS"

- **Global warming:** Increase in temp of earth over period of time. | Conservation of nature 4Rs'
- **Deforestation:** removal of forests. | • Reduce
- **Acid Rain:** Rain having pH less than 5.6. | • Reuse
- **Population Growth:** increase in population of particular area. | • Recycle
- **Urbanization:** growth of cities. | • Recover

## POLLUTION

\* The release of any substance into environment that has adverse effect on environment & health of living things.

### TYPES OF POLLUTION:

(i) Air

(ii) Water

(iii) Soil



contamination of air

contamination of  $H_2O$

contamination of soil

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