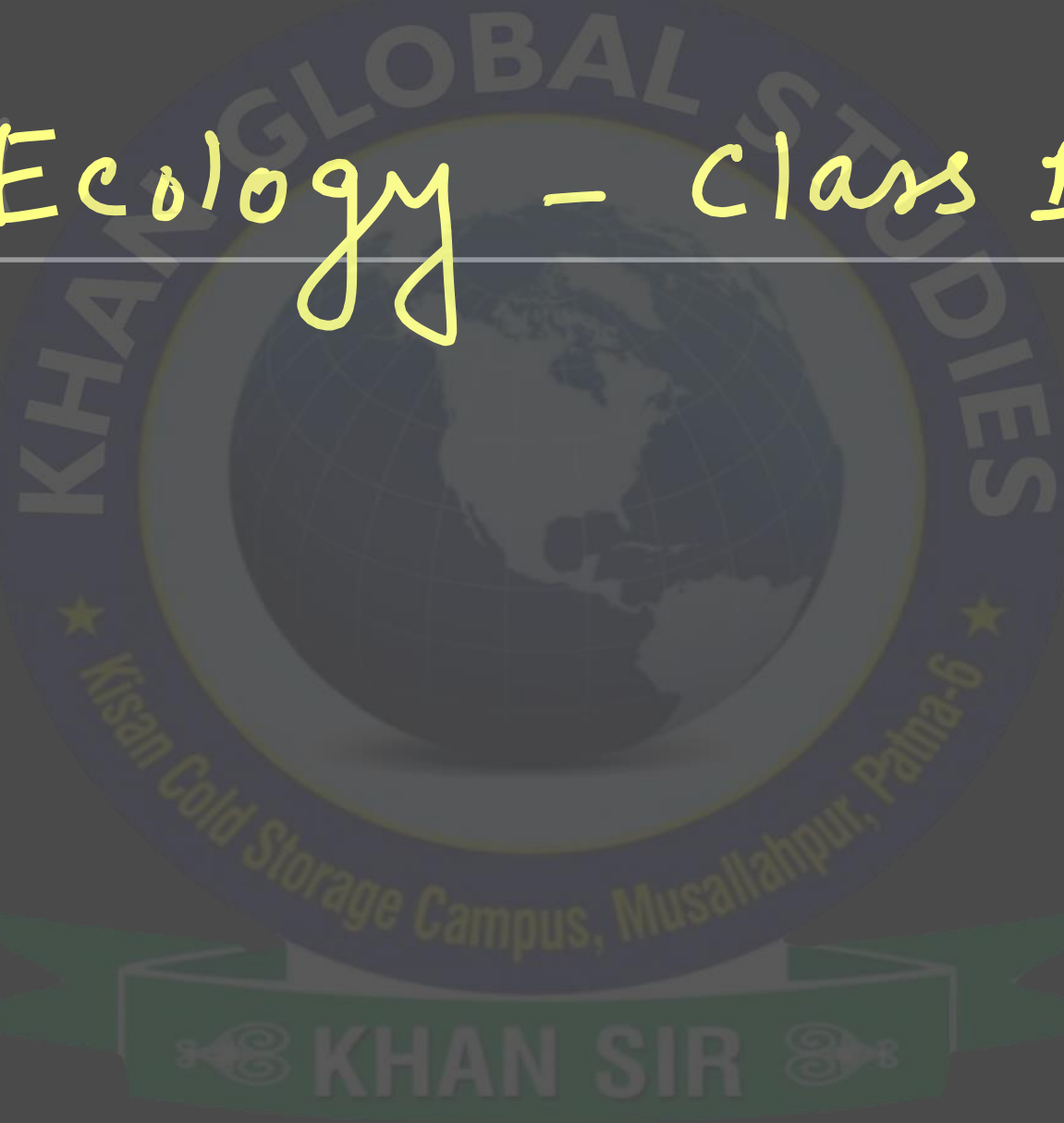




# Ecology - Class 1

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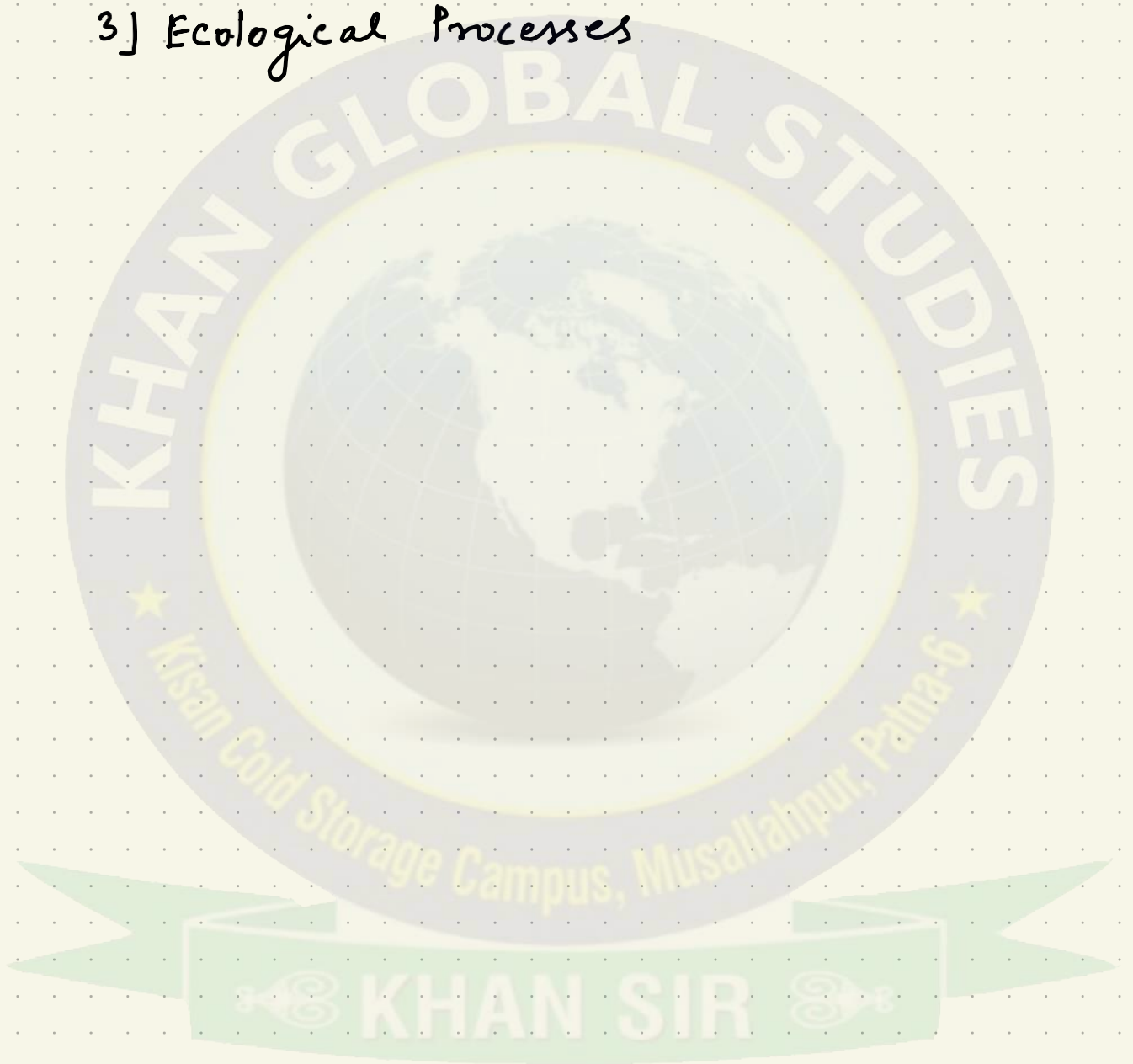
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- 1) Levels of ecological organisation
- 2) Basic definitions
- 3) Ecological Processes





# General Biological Organisation

Individual / Whole organism

↑ A + DoL

organ systems

↑ A + DoL

organs

↑ Aggregation + DoL

Tissues

↑ Aggregation + Division  
of Labour

Cells

↑ Assemble + Functionally related

macromolecular assemblies

↑ Assembly

macromolecules

↑ Polymerise

low mol. wt. molecules

↑ form bonds

atoms

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# LEVELS OF ECOLOGICAL ORGANISATION



Biosphere



Biome



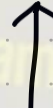
Ecosystem



Community



Population



Individual (Zeroth level of ecology)

↓  
No ecological analysis is done at this level



# Individual

✓ a single member of a species

group of organisms which can successfully interbreed

(Ernst Mayr)  
↓  
Biological Species Concept

→ and they can not do the same with organisms of different species.



They have their unique Gene Pool.

↳ sum total of all the genes and their variants in the members of a species.

3 stages of individual life-cycle

Pre-reproductive  
Juvenile

Reproductive  
Adult

Post-reproductive  
Senescent (old age)

# POPULATION

→ a population is a group of individuals occupying a geographical area.

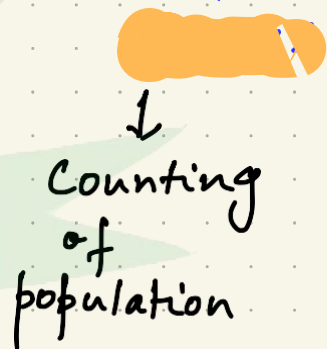
→ a population is a group of individuals occupying a geographical area.

→ varies according to the frames of:



→ smallest / lowest level of ecological:

- interactions
- analysis



→ ecological study of population

= Population Ecology  
is a part of Autecology



Autecology = ecology of

→ a species

or

→ a population

Aut  
↓  
self



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# COMMUNITY

o a group of organisms which are part of the ecosystem or habitat.

1° interaction = Direct  
2° " = Indirect

o Community → Biotic part of an ecosystem  
→ does **NOT** include abiotic factors.

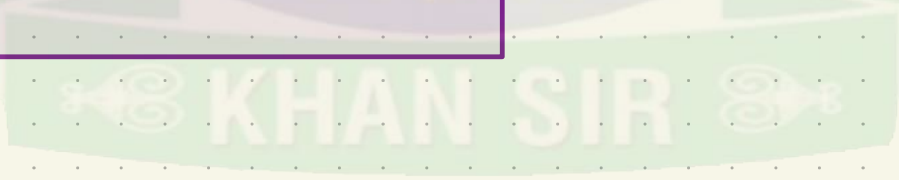


# ECOSYSTEM

an ecological community + its abiotic surroundings and factors +

- ✓ a complete unit of ecological analysis
- ✓ all principal ecological phenomena can be seen at this level

Flow of matter and energy  
within community  
Between Community & Abiota





# BIOMES

large communities with common / similar biota because they are shaped by same / similar abiotic factors.

# BIOSPHERE

the sum total of all the ecosystems on planet earth.

