

11th STD Bio - Botany

pure science

Botany

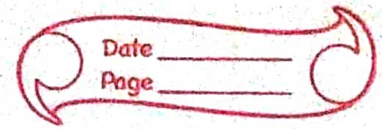
I. Living World

- * Earth was found to be some 4.6 billion years old
- * Life Supporting Planet with land forms like mountains, plateaus, Glaciers
- * Biosphere complex structure. Life on earth exists
- * DNA essential for the regulation of life and is made up of carbon, hydrogen nitrogen and oxygen
- * living and non-living things exist together to make our planet unique
- * Species on earth

II. Attributes of a living organisms

Growth

- * intrinsic property of all living organisms increase cells both in number and mass
 - * extrinsic
- Growth in non-living objects is extrinsic mountains, boulders, and sand mounds.



* intrinsic
Living cells grow by the addition of new protoplasm within cells

* growth in living things intrinsic

Cellular Structure

* All living organisms are made of cells

cells type

prokaryotes

Eukaryotes

→ unicellular
lack membrane

→ bound nuclei

→ organelles
like mitochondria
Golgi bodies,
Endoplasmic
Reticulum

→ Example
Bacteria, BGA

→ Eu ⇒ good
karyotic ⇒
Nucleus

→ definite
Nucleus

→ membrane
bound
organelles
present

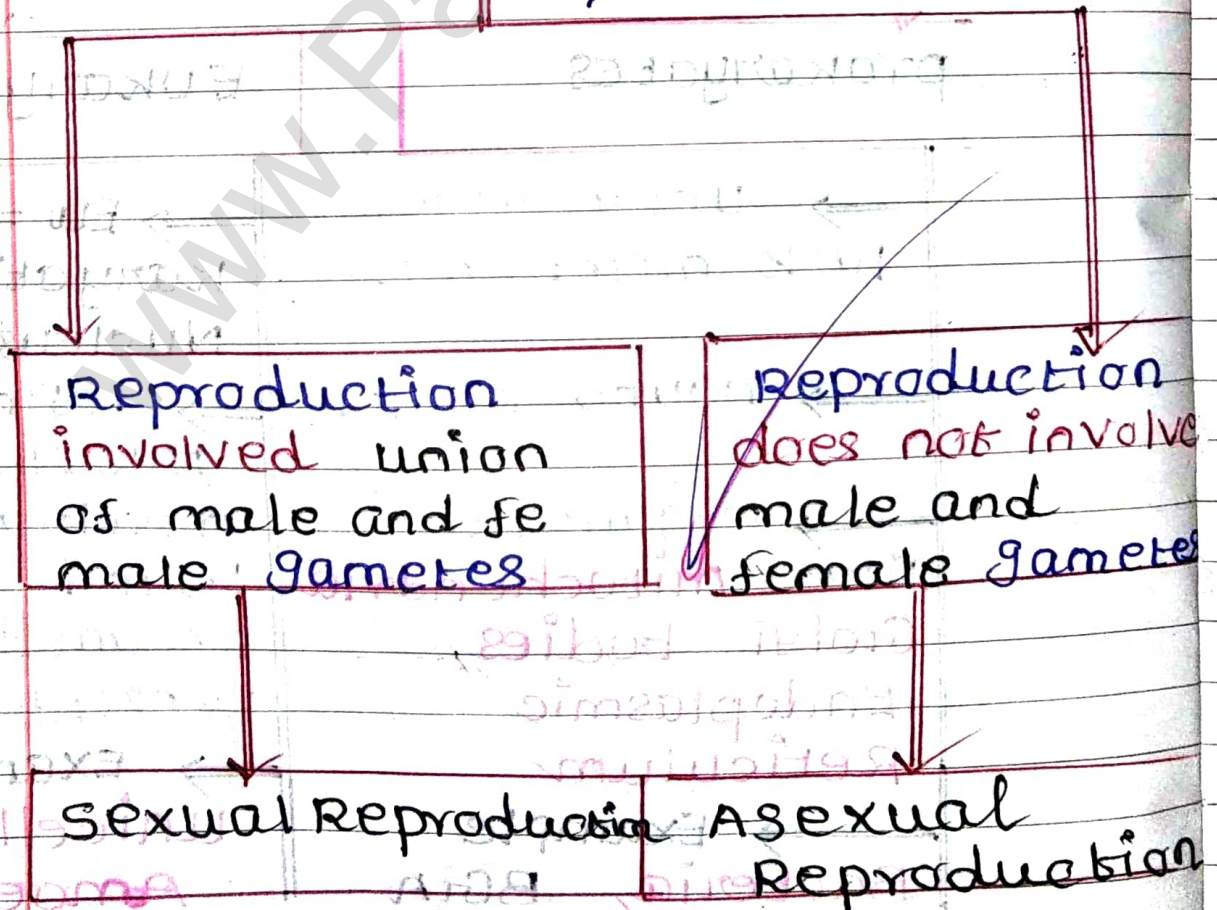
→ Example
unicellular
Amoeba
⇒ multicellular
Oedogonium

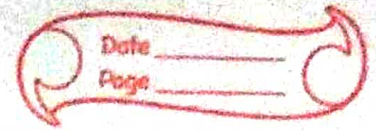
Reproduction

* one of the fundamental characteristic features of living organisms

* tendency of a living organisms to perpetuate it is own species *

Reproduction Types





A Sexual Reproduction in living organisms

conidia \Rightarrow Aspergillus, penicillium
 budding \Rightarrow Hydra and yeast
 binary fission \Rightarrow Bacteria Amoeba
 fragmentation \Rightarrow Spirogyra
 protonema \Rightarrow Mosses
 Regeneration \Rightarrow planaria

Response to stimuli

* All organisms are capable
 Sensing Environment Respond
 Various physical, chemical,
 Biological Stimuli.

* Animals sense their
 Surrounding by sense organs
 consciousness

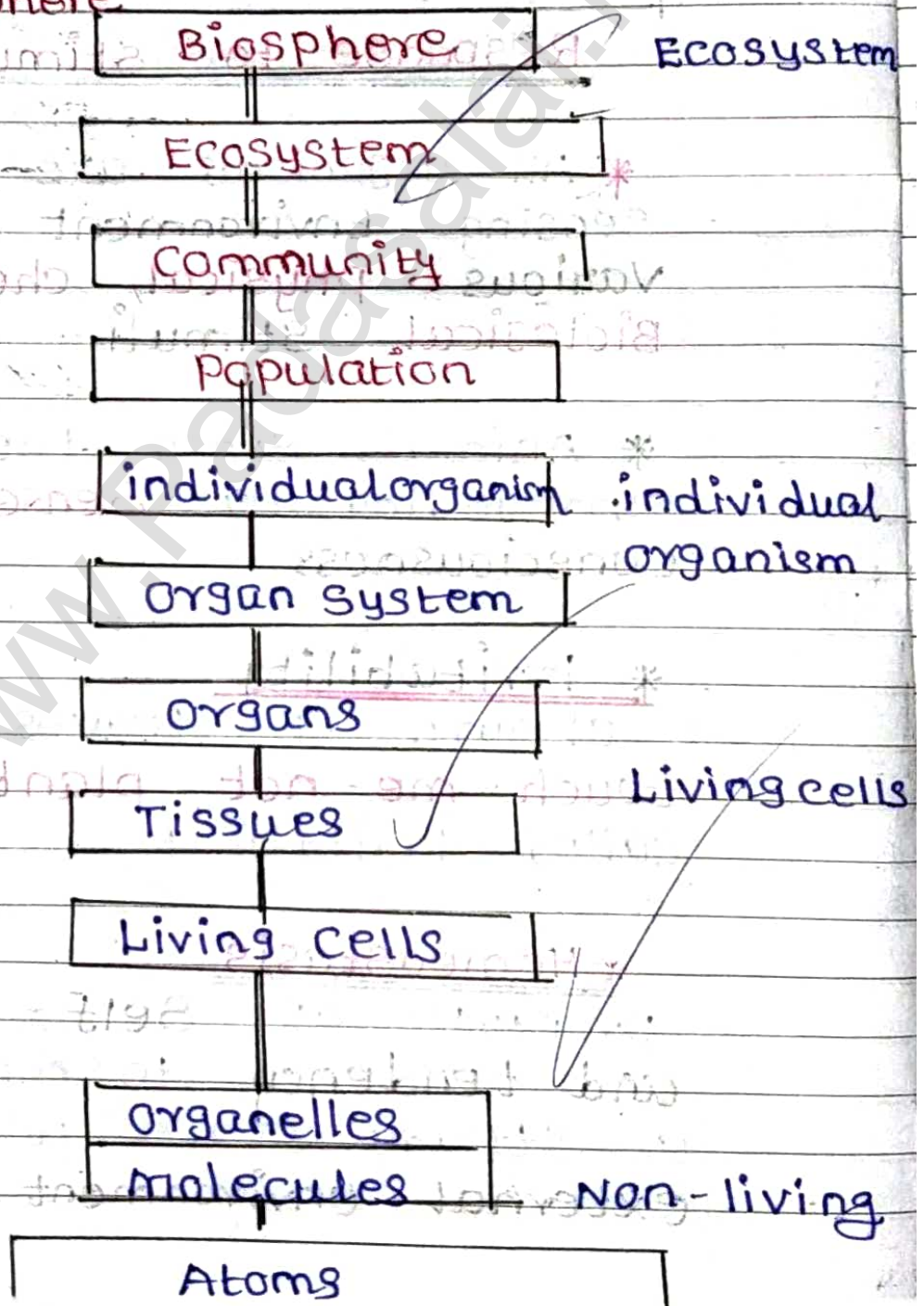
* Irritability
 closure of leaves in
 touch-me-not plant is
 called irritability.

* Homeostasis
 property of self-regulation
 and tendency to maintain
 a steady state within an
 external environment

Movement, Nutrition, Respiration and Excretion are also considered as a property of living things

Biosphere

The levels of organization in living organisms begin with atoms and end in Biosphere





metabolism

The sum total of all the chemical reactions taking place in a cell of living organisms

metabolism

Anabolism

catabolism

	Anabolism	catabolism
1.	Building up process	Breaking down process
2.	Smaller molecules go from larger molecules	Larger molecules break into smaller units
3.	chemical energy is formed stored	chemical energy is released and used
4.	Example synthesis of protein from amino acid	Example Breaking down of Glucose to CO ₂ and H ₂ O

Attributes of Living organisms

Growth / வளர்ச்சி

Nutrition / உணவுட்கம்

movement / நகர்வு

Excretion

metabolism
வளர்ச்சிக்கு லாசனம்

Reproduction
காம்புகூக்கம்

Irritability

Respiration
சுவாசம்