



BIOLOGY

CLASS -X

MODULE-1

– LIFE PROCESS

– CONTROL AND COORDINATION



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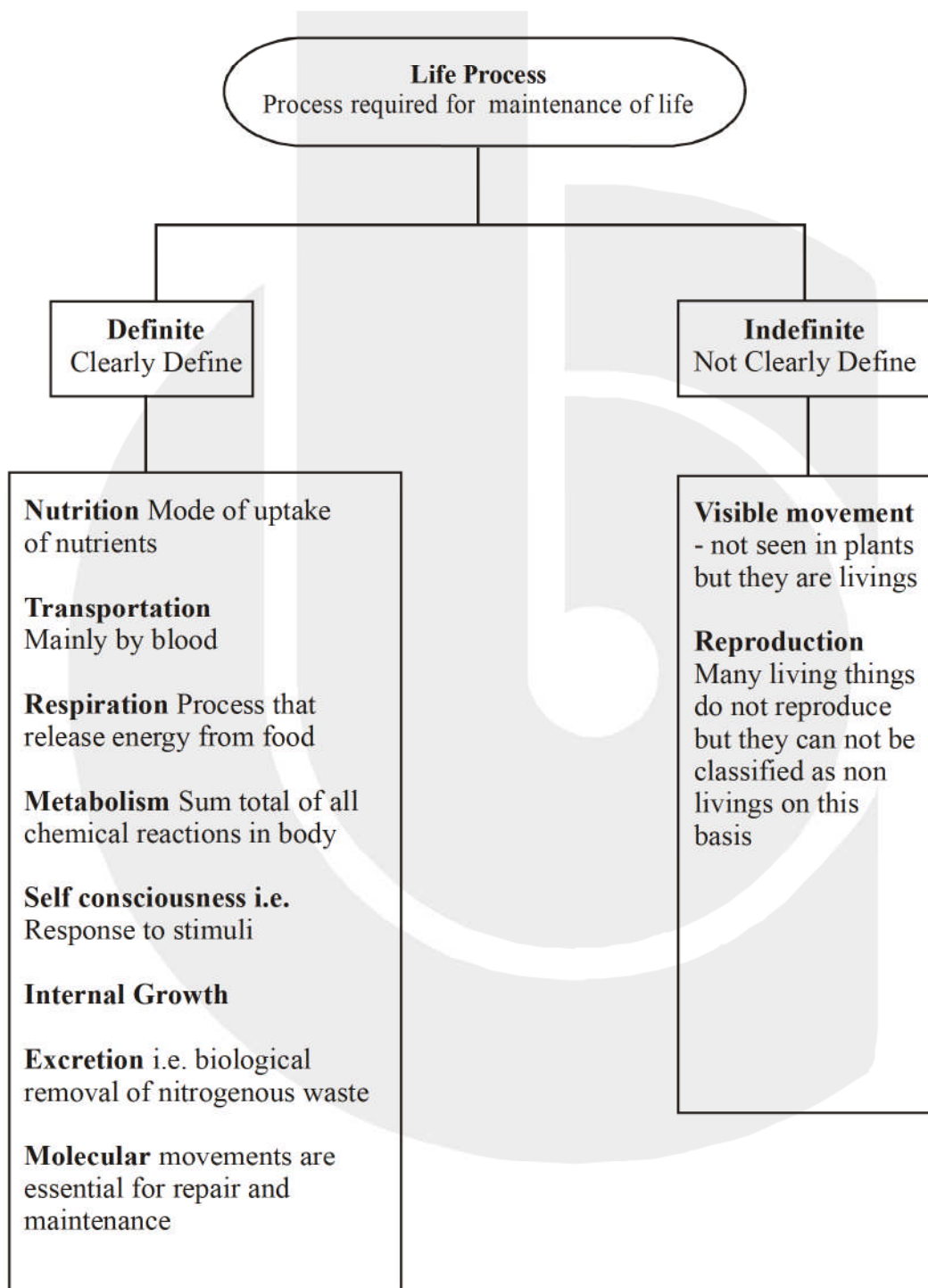
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2. CONTROL AND COORDINATION

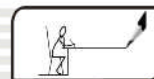
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PRECISE



1

LIFE PROCESS



THEORY

INTRODUCTION

- **Life :** Life is a self regulated complex system of molecules where chemical reactions are going on all the time that lead to its maintenance, growth, responsiveness and reproduction.
- **Living organism :** Living beings are organised self regulated discrete entities which exhibit the various characteristic of life like movements, growth, responsiveness and reproduction.
- **Life processes :** All the living organisms including humans perform a number of activities such as nutrition, respiration, excretion, growth & reproduction. These activities are characteristics of living organism & help in maintenance of life. These maintenance functions of living organisms are known as **life processes**.

Some Characteristic of living organisms

- Cellular organization :** All organisms are made up of cells.
- Sensitivity :** Giving response to stimuli (Stimulus = change in environment) (Response = visible effect because of stimulus) Consciousness is one of the most important definite life feature. *eg.* Plants grows towards light, pupil dilate in dark etc.
- Respiration & Energy utilization:** Respiration is the process in which nutrients are converted into useful energy in a cell. Energy produced during respiration is used to perform many kinds of works with in the body.
- Internal growth:** It is characteristic feature of livings.
- Homeostasis:** All organism maintain relatively constant internal conditions in different environments, known as homeostasis.
- Regulation:** All organism have neural or chemical regulatory mechanism that co-ordinate internal processes.
- Reproduction:** It is a process of producing young ones of their own kinds. Heredity character are passed from parent to the offsprings during reproduction.
- Metabolism:** The sum total of all the chemical & physical changes that are constantly taking place in living organisms & are necessary for life.

Types of metabolic pathways

- Anabolic pathways :** Biosynthetic pathways, in which complex substances are synthesized from simpler ones. Ex : Photosynthesis (Endothermic reaction – energy is used)
- Catabolic pathways :** Break down of complex organic substances into simpler ones. Ex : Respiration. (Exothermic – energy released)