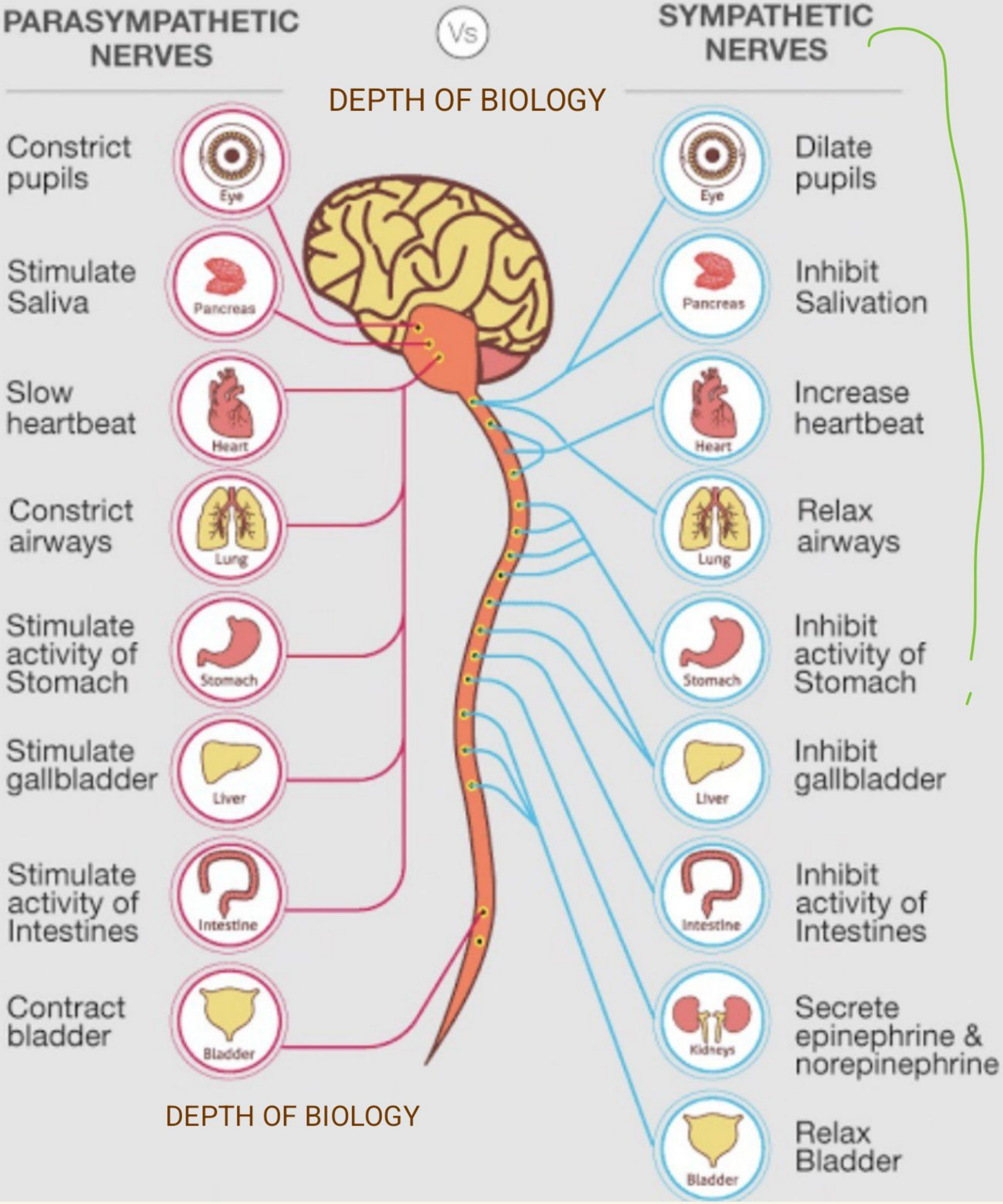


Unit-3

Lecture-2

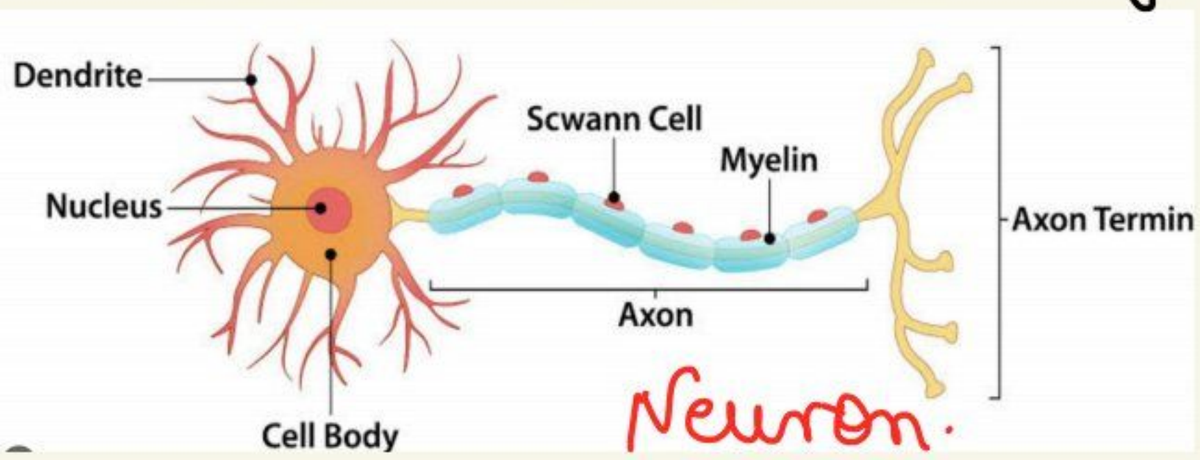
(ology).

DEPTH OF BIOLOGY

Neurohumoral Transmission ⇒

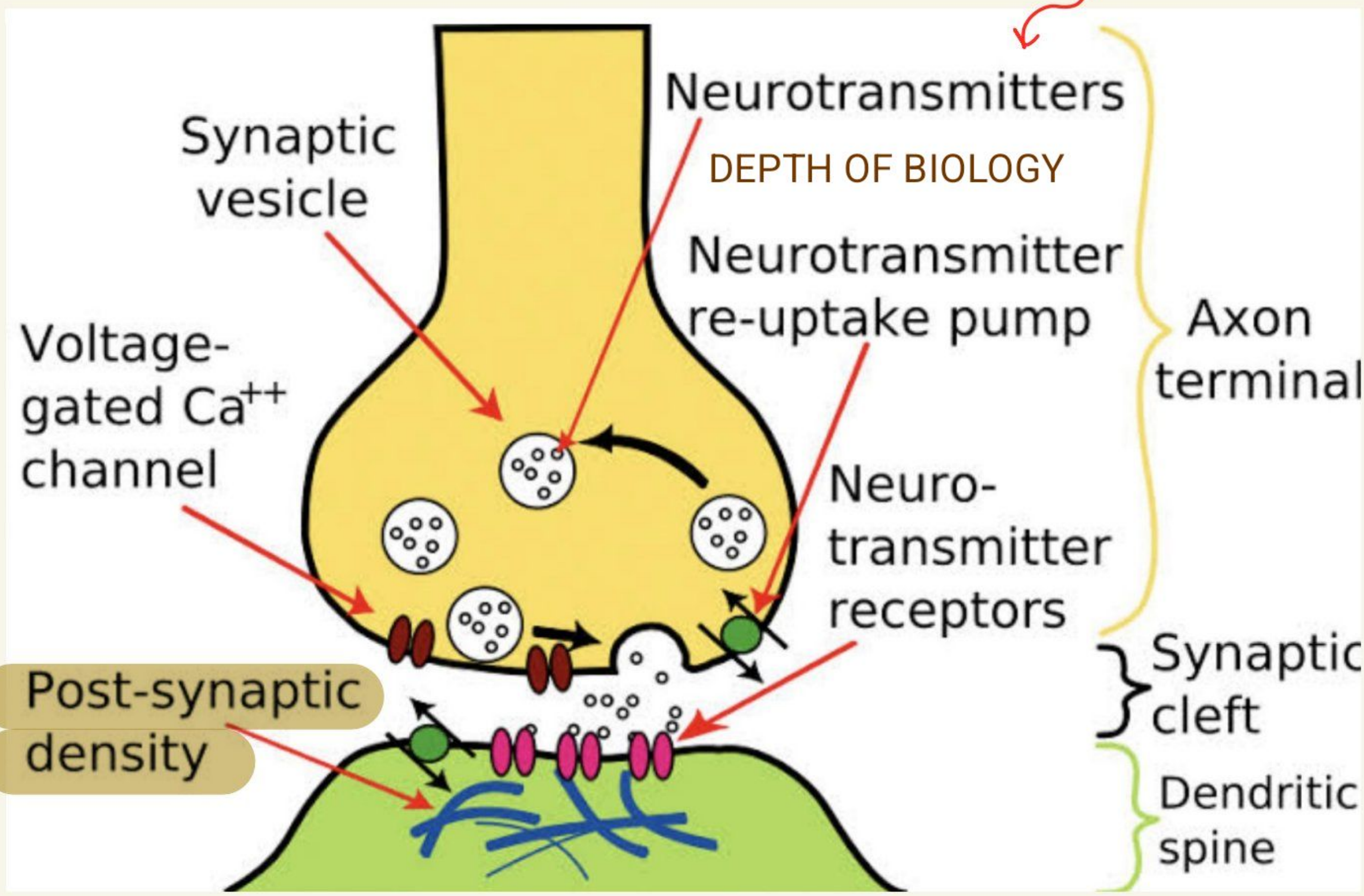
Transfer.

Chemical Messanger



Neuron.

Signal Transfer



• Steps Involved in Neurohumoral Transmission.

① Impulse Conductance → DEPTH OF BIOLOGY

② Neurotransmitter Release →

③ Neurotransmitter act on Post Synaptic Neuron.

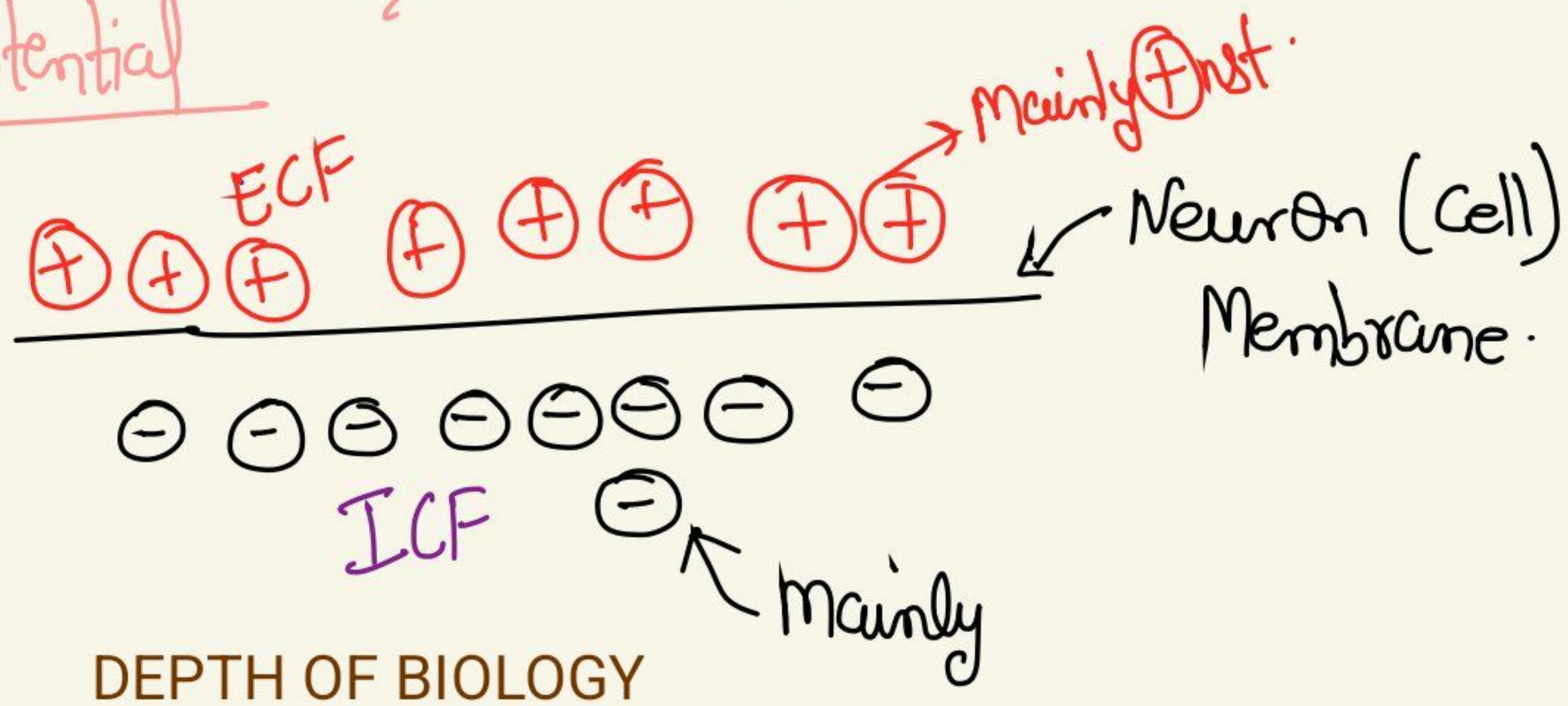
④ Post Synaptic Activity.

⑤ Termination of Transmitter Action →

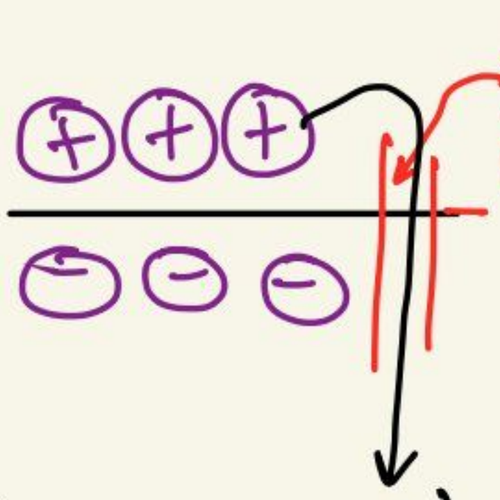
① Impulse Conductance → Impulse Genrated in form of Action Potential.

DEPTH OF BIOLOGY

Resting Membrane Potential ⇒ −70mv.



DEPTH OF BIOLOGY



Signal generate then

$-70mv \longrightarrow -55mv$

(Threshold Potential)

(Nat channel Open)

⇓

Ligand gated or Voltage Ion Channel.

⇒ due to this ⊕ve charge move from ECF ⇢ ICF

$-70mv \longrightarrow -55mv.$ ⇢ ICF

& Na^+ movement (ECF ⇢ ICF)

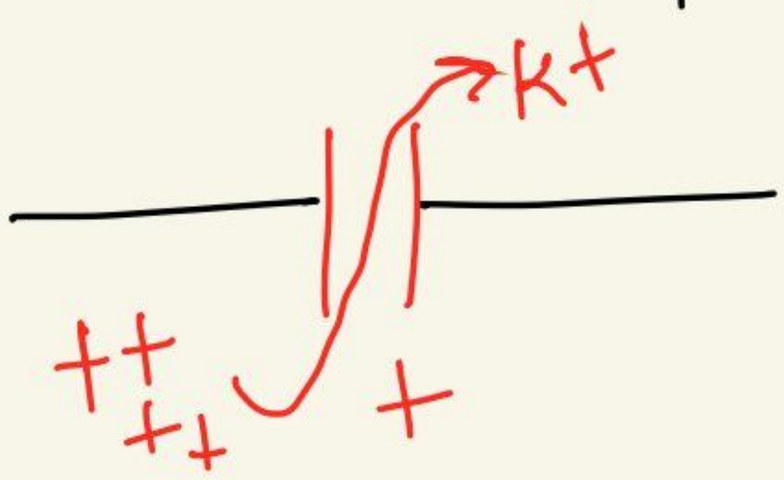
⇓

Continous (Depolarisation).

$-55mv \longrightarrow +20/+30\ mv$

⇓ Now, after depolarisation.

Now K^+ Channel open



⇒ Lead to repolarisation.

⇓

⇓

Generate Nerve Impulse.

The Cycle of depolarisation & repolarisation Called Action Potential

This Action potential generate 1000 times in One Second.

Release →

Ca+2 Ca+2

↳ Pre-Synaptic Neuron

Ca+2 Channel

Neurotransmitter

Vesicle

DEPTH OF BIOLOGY

Ca+2 → Vesicle → Exocyto Sis

Neurotransmitter Release.

depend on Nature It Induced 2 Type of Action.

EPSP

IPSP

Post-Synaptic Neuron.

DEPTH OF BIOLOGY

EPSP

Excitatory

IPSP

Inhibitory

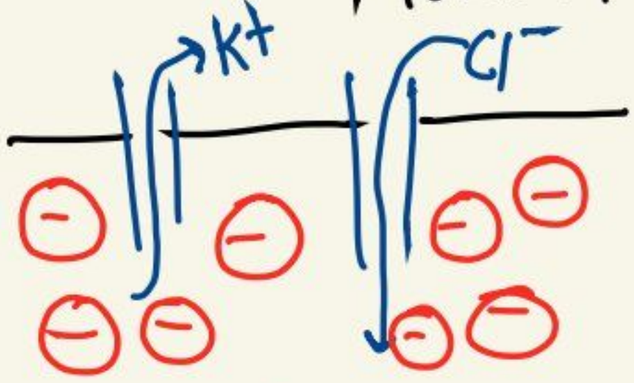
PSP = Post Synaptic Potential

Increase in Permeability of Cation (Na+ or Ca+)

→ Cause Depolarisation.

followed by K+ efflux.

K+ efflux. & Cl− Moves in



Generate Nerve Impulse

& Lead to Pharmacological Action.

Lead to Hyper-Polarisation

Resist.

⑤ Termination of Transmitter Action ⇒

Neurotransmitter degrade → Locally
Neurotransmitter degrade → Enzymatically.

eg → Ach ← degrade by Cholinesterase

Co-Transmission

PNS & CNS — stimulate → Releases More then One Active Substance

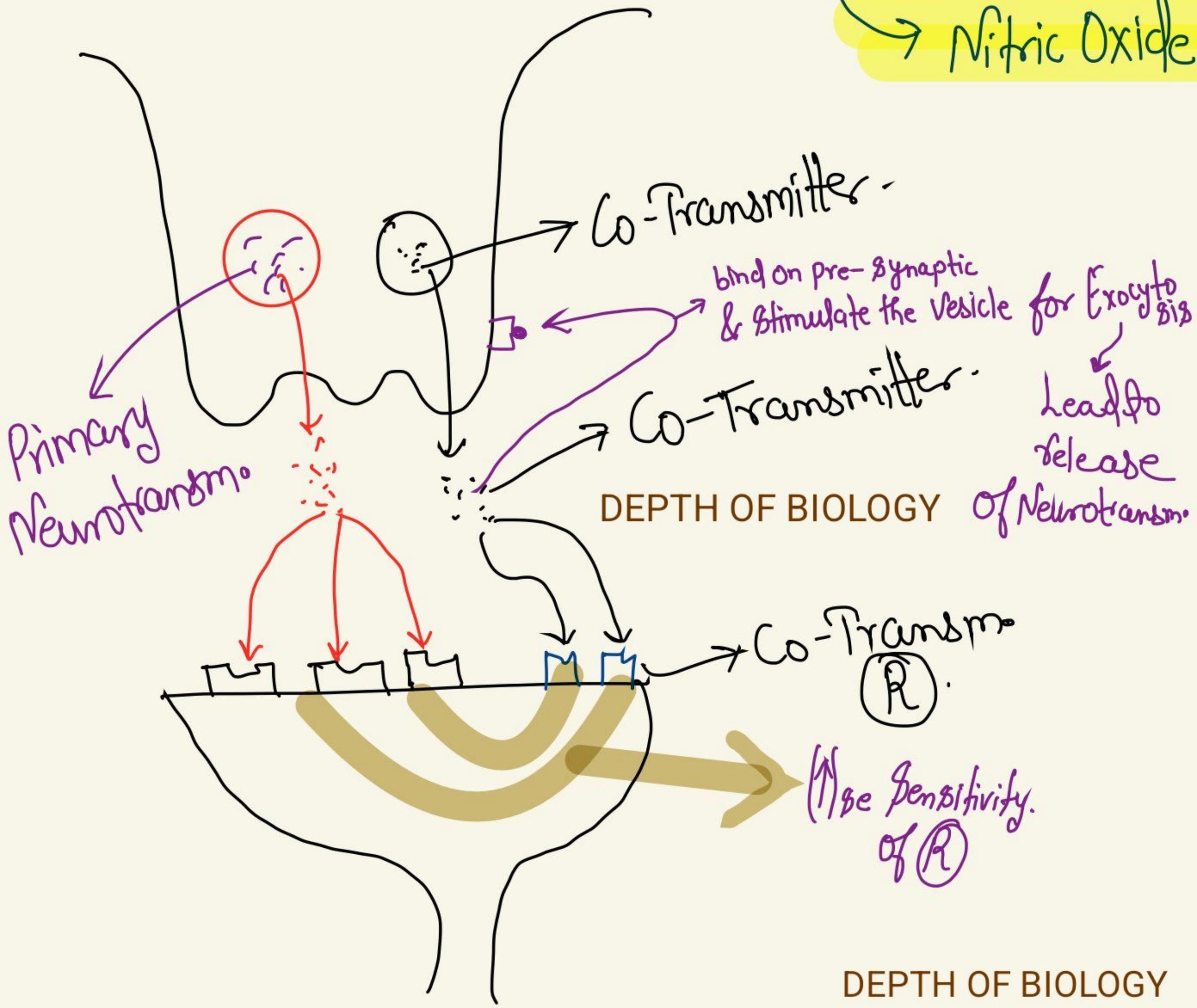
Co-Transmission is the release of diff. type of Neurotransmitter from a Single Nerve Terminal

& Co-Transmitter ↓ Release with Primary Neurotransmitter.

Eg ⇒ Primary Neurotransm. = Ach.

DEPTH OF BIOLOGY

Co-Transmitter → Prostaglandin
→ ATP
→ Nitric Oxide



DEPTH OF BIOLOGY

Classification of Neurotransmitter

DEPTH OF BIOLOGY

Excitatory.

Bind on (R)

Activation of (R)

Action

- Ach
  - Muscle Contraction
  - Involve in Learning & Memory
- eg → Dopamine, Adrenalline → release in Symp. Condition.
- Nor-Adrenalline.
  - → It Improve Attention, Contract Blood Vessle.
- Histamine
  - released by Mast cell (Allergy).

Inhibitory.

Block the (R)

- GABA
  - High Level → Improve focus
  - Low Level = Anxiety
- Serotonin
  - → Happines.

DEPTH OF BIOLOGY

Both → Ach, Dopamine, Nor-Adrenalline

feeling of pleasure, Motivation

DEPTH OF BIOLOGY