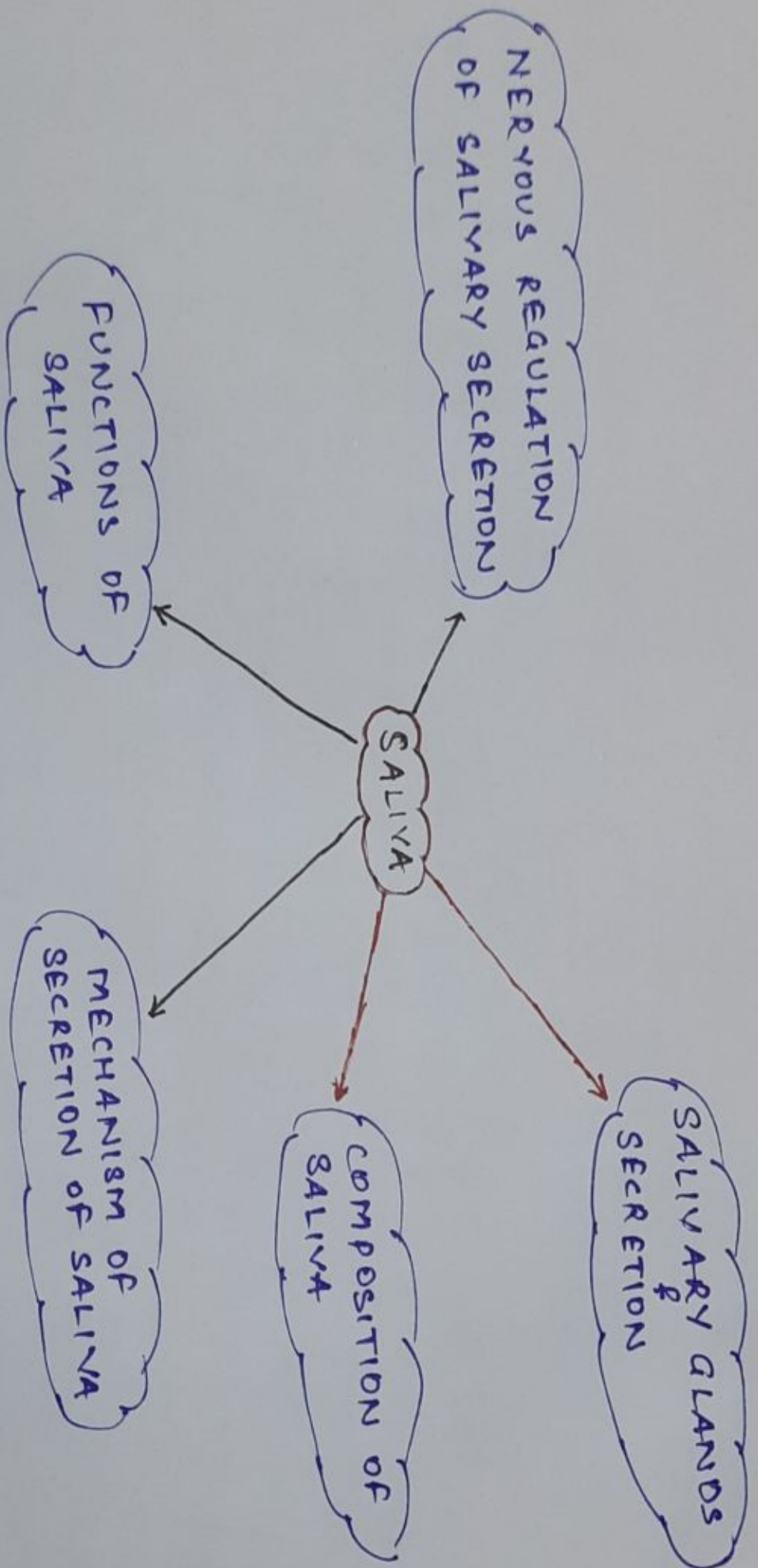




SALIVARY GLANDS & SECRETION

GLANDS :-

- PAROTID
- SUBMANDIBULAR
- SUBLINGUAL

[MANY TINY ✓ BUCCAL
✓ LABIAL
✓ GLOSSOPALATINE]

SECRETION :- → 800 - 1500 mL (Avg. 1000 mL)

→ 2 MAJOR TYPES OF PROTEIN SECRETION

(i) SEROUS SECRETION ⇒ CONTAINS PTYALIN
(α -AMYLASE)

(ii) MUCOUS SECRETION ⇒ CONTAINS MUCIN

→ PAROTID GLAND ⇒ ENTIRELY SEROUS TYPE

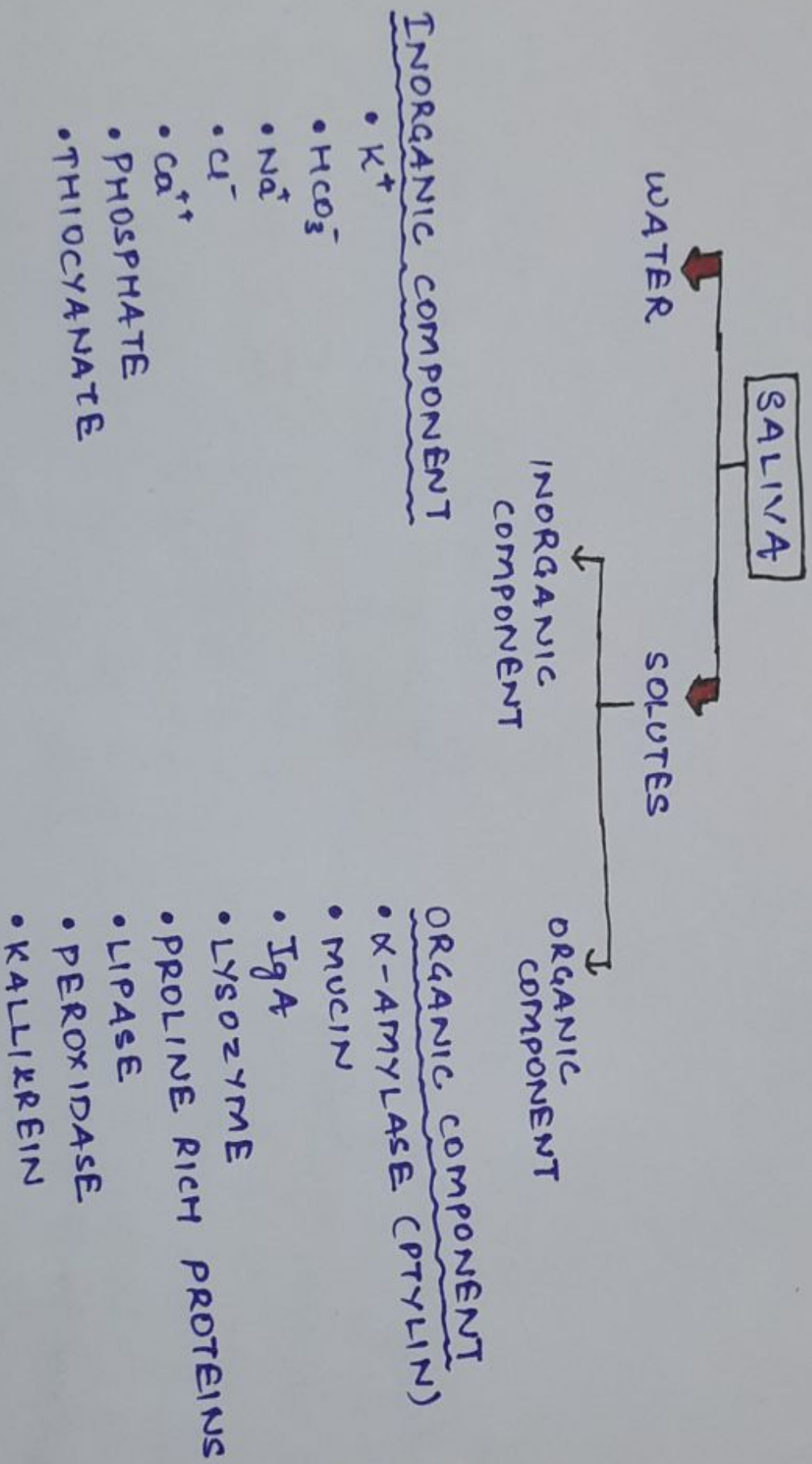
SUBMANDIBULAR
⇒ SEROUS + MUCOUS

SUBLINGUAL

→ pH :- 6.0 TO 7.0

COMPOSITION OF SALIVA:-

⇒ LARGE QUANTITIES OF K^+ AND HCO_3^- IONS
⇒ Na^+ AND Cl^- SEVERAL TIMES LESS THAN PLASMA.



MECHANISM OF SECRETION OF SALIVA:-

PRIMARY STAGE

- INVOLVES ACINI SECRETION
- CONTAINS PTYALIN AND/OR MUCIN IN A SOLUTION OF IONS WITH CONCENTRATION NOT GREATLY DIFFER FROM THOSE OF ECF.

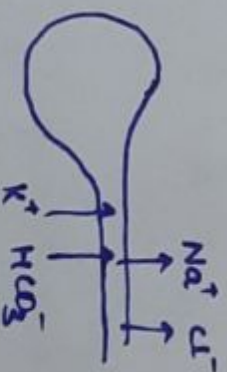
SECONDARY STAGE

- INVOLVES SALIVARY DUCTS
- $\text{Na}^+ \Rightarrow$ ACTIVE REABSORPTION FROM DUCTS
- $\text{K}^+ \Rightarrow$ ACTIVE SECRETION IN RESPONSE TO Na^+ REABSORPTION
- Na^+ REABSORPTION $>$ K^+ SECRETION

CREATION OF ELECTRICAL NEGATIVITY OF ABOUT
-70mV IN DUCTS

Cl^- REABSORPTION PASSIVELY

- HCO_3^- SECRETION
- $\uparrow$ PASSIVE EXCHANGE FOR Cl^- IONS
- $\uparrow$ ACTIVE SECRETORY PROCESS



NET RESULT:-

Na^+ AND Cl^- IONS $\Rightarrow$ 15 mEq/L
($\frac{1}{7}$ TH TO $\frac{1}{10}$ TH OF PLASMA)

K^+ IONS $\Rightarrow$ 30 mEq/L
(7 TIMES OF PLASMA)

HCO_3^- IONS $\Rightarrow$ 50-70 mEq/L
(2-3 TIMES OF PLASMA)

DURING MAXIMAL SALIVATION:-

- RATE OF ACINAR SECRETION INCREASE AS MUCH 20 FOLD
- DUE TO RAPID FLOW THROUGH DUCTS, DUCTAL RECONDITIONING OF SECRETION IS CONSIDERABLY REDUCED.

FUNCTIONS OF SALIVA:-

1.) DEFENSE

- (i) ANTIBACTERIAL
- (ii) ANTIFUNGAL
- (iii) ANTIVIRAL
- (iv) IMMUNOLOGICAL

2.) DIGESTIVE FUNCTION

- (i) DIGESTIVE ENZYME (PTYLIN, LIPASE)
- (ii) FORMATION OF BOLUS
- (iii) TASTE

3.) PROTECTIVE FUNCTIONS

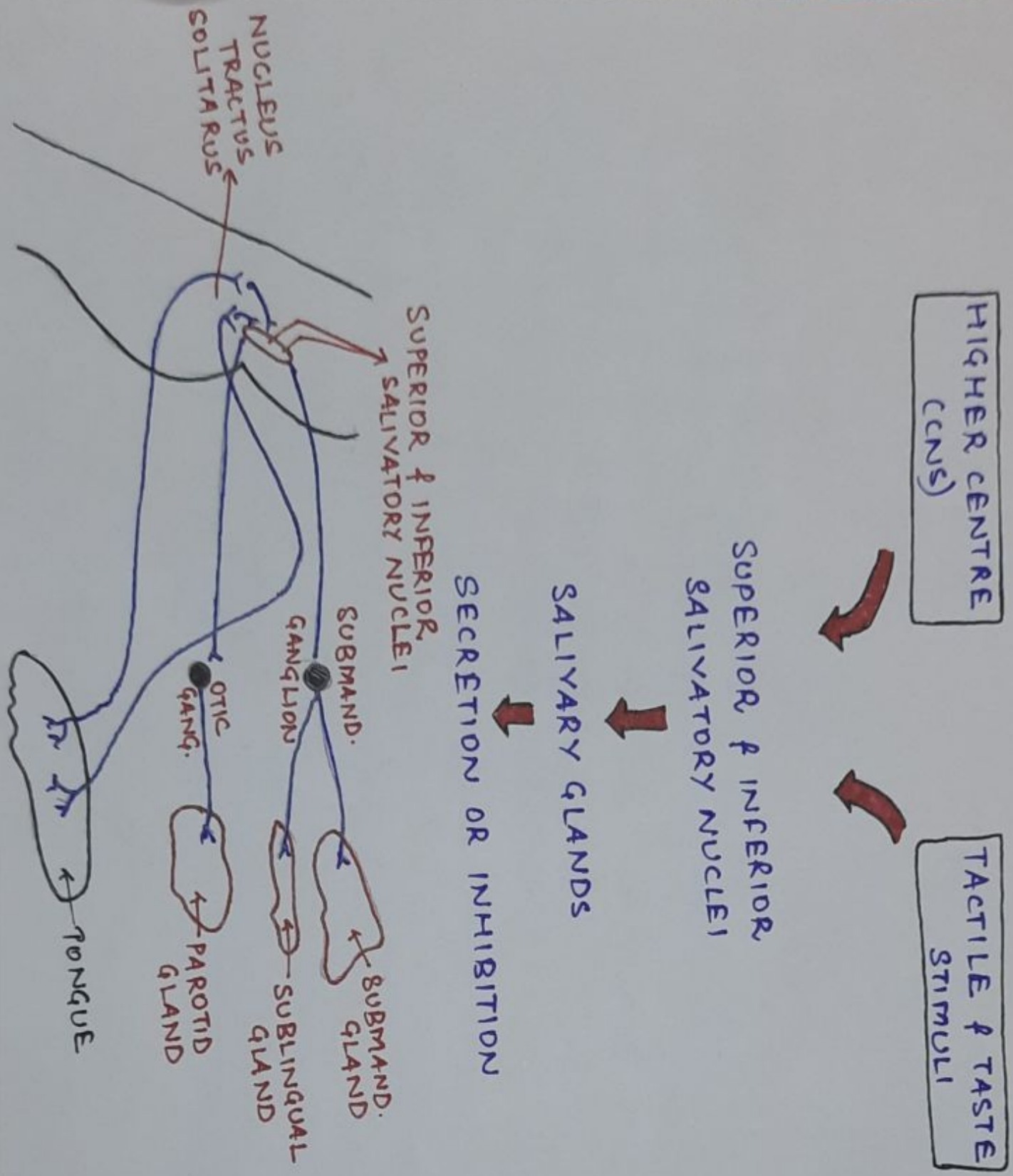
- (i) PROTECTIVE COVERING FOR SOFT TISSUES
- (ii) PROTECTIVE COVERING FOR HARD TISSUES TEETH

4.) LUBRICATION FUNCTIONS

- (i) KEEPS ORAL CAVITY MOIST
- (ii) FACILITATES SPEECH
- (iii) HELPS IN MASTICATION & SWALLOWING

5.) BUFFERING FUNCTION

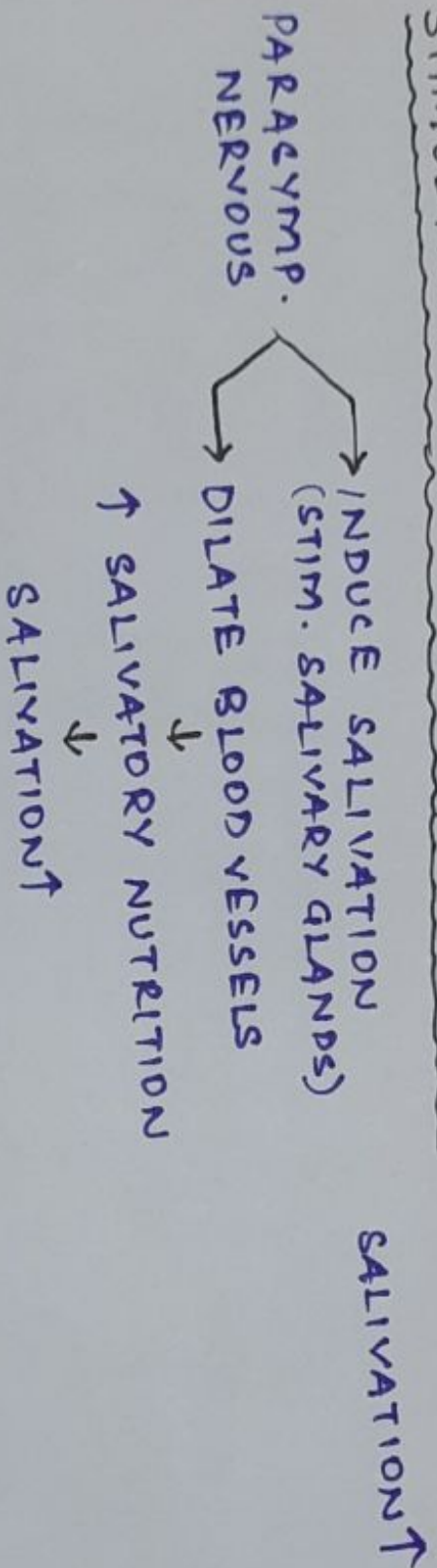
NERVOUS REGULATION OF SALIVARY SECRETION:-



⇒ SALIVARY GLANDS ARE CONTROLLED MAINLY BY PARASYMP. N.S. ALL WAY FROM SUPERIOR & INFERIOR SALIVATORY NUCLEI

⇒ SYMPATHETIC STIMULATION CAN ALSO INCREASE SALIVATION A SLIGHT AMOUNT MUCH LESS THAN PARASYMPATHETIC STIMULATION THROUGH SUPERIOR CERVICAL GANGLION.

⇒ STIMULATION OF BLOOD SUPPLY OF GLANDS:-



-o PARTIALLY BY:-

