



# STAFF NURSE

## NATIONAL RURAL HEALTH MISSION

DEPARTMENT OF MEDICAL, HEALTH & FAMILY  
WELFARE RAJASTHAN

**VOLUME – 7**

**PART - II**

**MEDICAL SURGICAL NURSING  
(HUMAN BODY SYSTEM & DISORDERS)**



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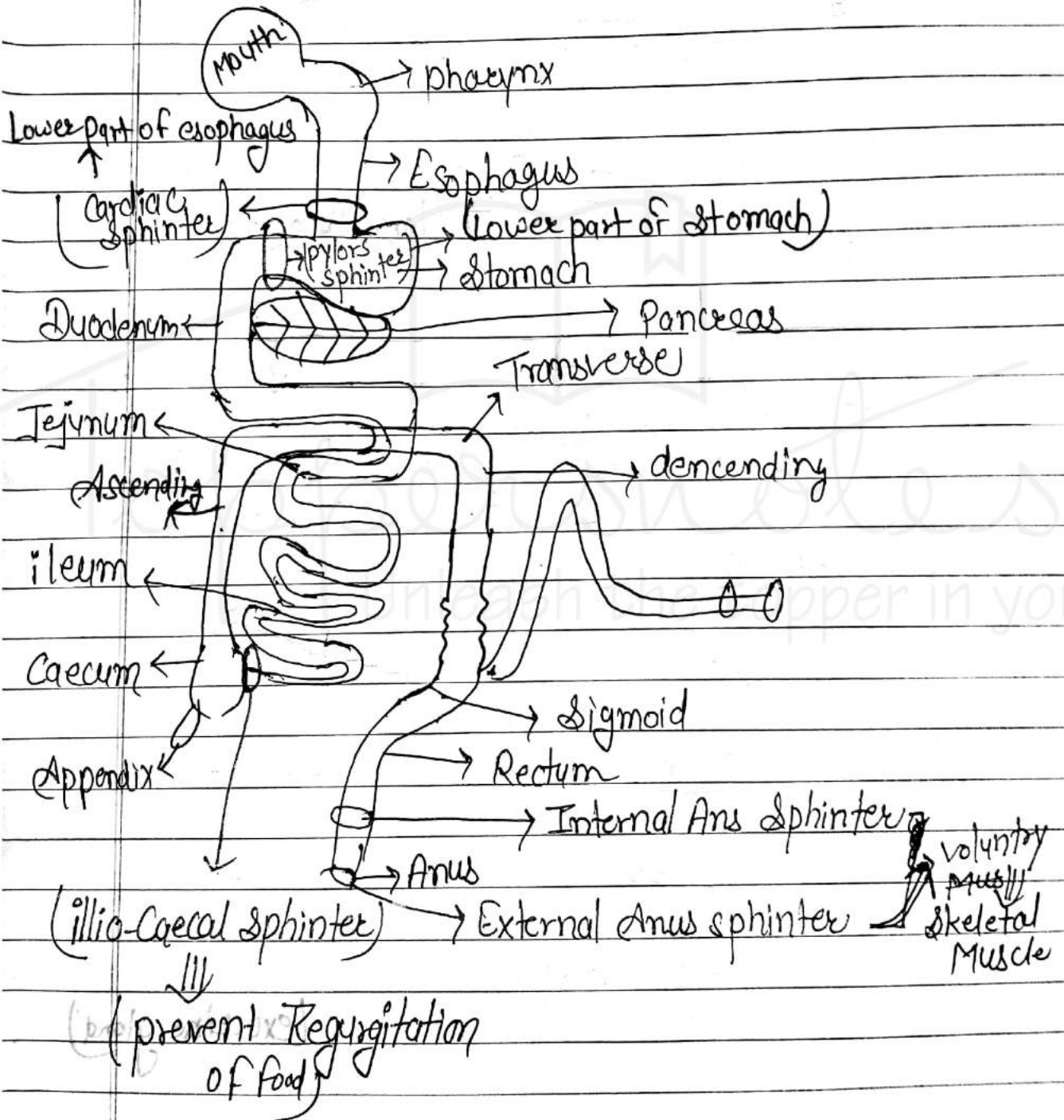
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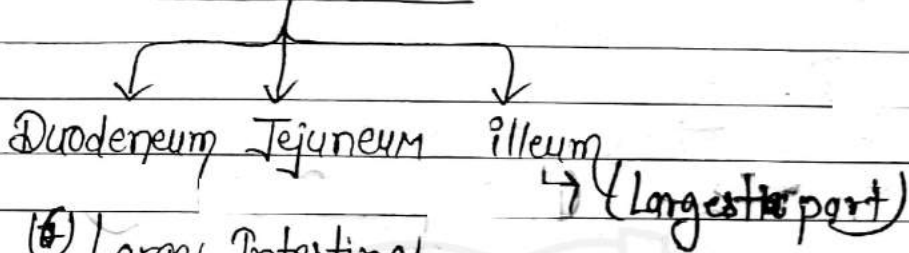
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# \* DIGESTIVE SYSTEM \*

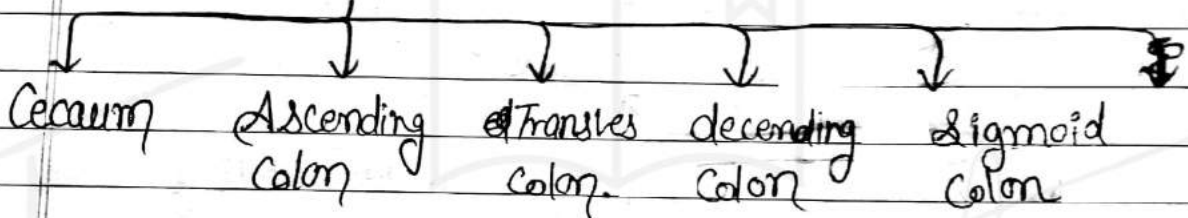
## \* GI Tract Organ



- (1) Mouth
- (2) Pharynx
- (3) Esophagus
- (4) Stomach
- (5) Small intestine



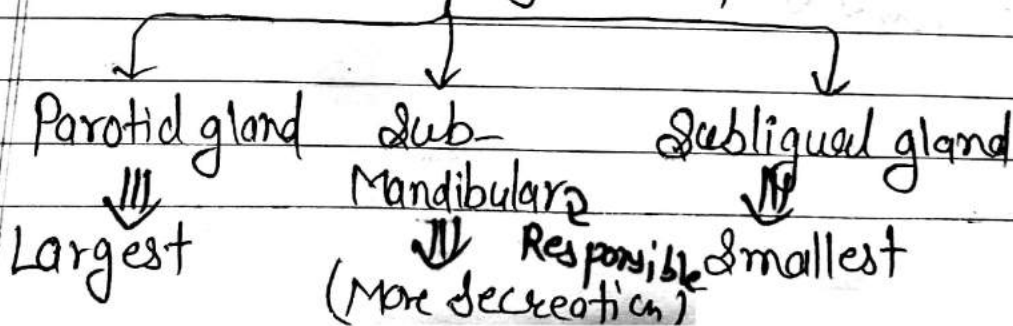
(6) Large Intestine



- (7) Rectum
- (8) Anus

\* Accessory organ

- (1) Liver
- (2) Pancreas
- (3) Gallbladder
- (4) Salivary gland (3 pairs) (exocrine gland)



## \* Sphincter in Digestive System

(1) Cardiac Sphincter ⇒ Situated Lower part of esophagus

In-voluntary ⇒ (2) pylorus sphincter ⇒ present in Lower part of stomach

Smooth Muscle ⇒ (3) illeo-caecal sphincter ⇒ present b/w the illeum and caecum

(4) Internal anal sphincter ⇒

voluntary ⇒ (5) External anal sphincter ⇒  
Skeletal muscle

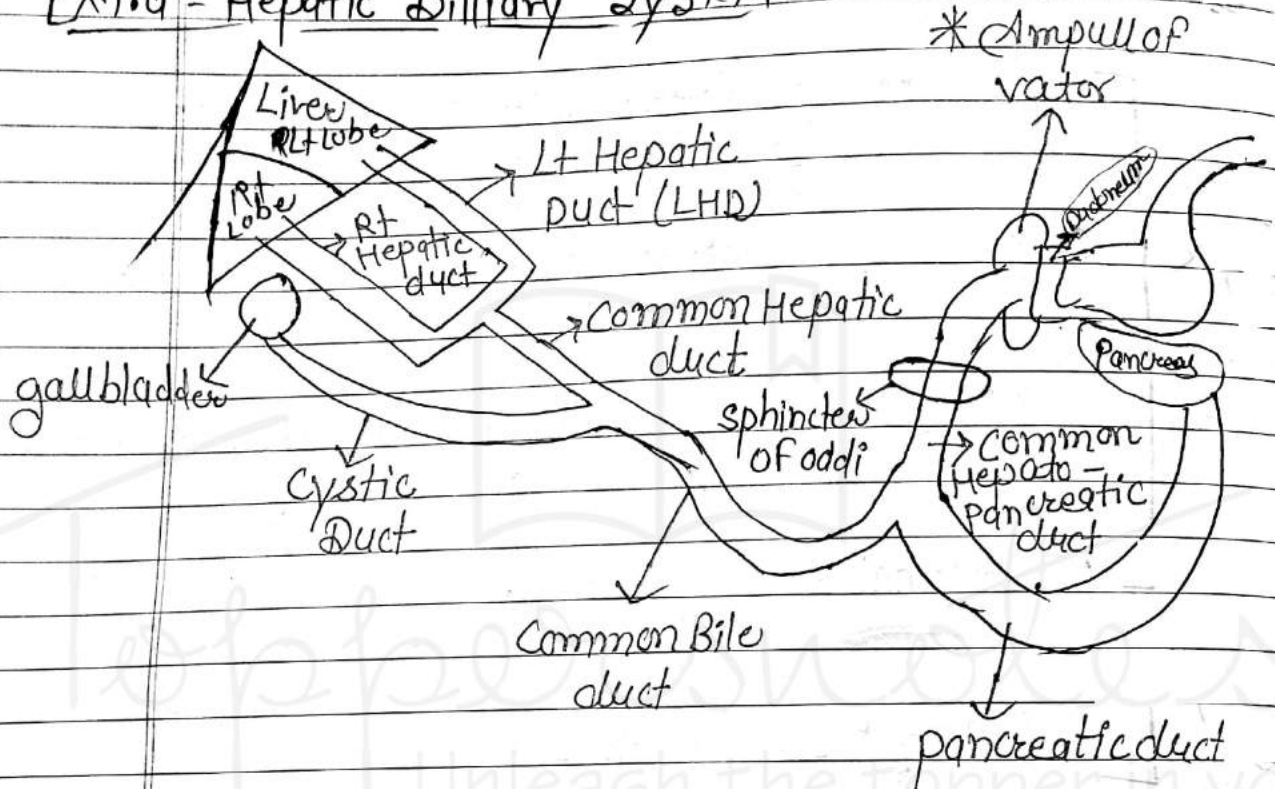
⇒ All sphincter of GIT contain the smooth muscle except External anal sphincter

which contain skeletal muscle



① [Bile synthesis  $\Rightarrow$  By Liver  
Bile stored  $\Rightarrow$  In gall-bladder]

## Extra-Hepatic Biliary System



\* ERCP

(Endoscopic Retrograde Cholangio-pancreatography)

It is endoscopic procedure in which a endoscope is inserted through mouth via esophagus and stomach into the duodenum and ~~reaches~~ reaches to common Hepato-pancreatic duct

The procedure is done for the visualization of of common Hepato-pancreatic duct, pancreatic duct, common bile duct, cystic duct and

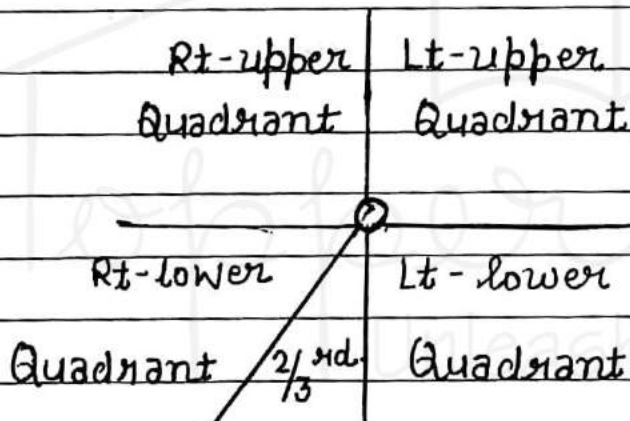


gall bladder for any obstruction.

① Morphine Sulphate are contra-indicated.

- ↓
1. Bronchial Asthma (Most Common)
  2. Pancreatitis
  3. Cholecystitis
- Because relaxed of sphincter of oddi.

② Quadrant of Abdomen



Mc Burney point  
(Appendix)

↓

Most Common complication  
of appendix

① Perforation

(a) Ascities (b) peritonitis

Rt Hypo-chondrium	Epigastrium	Lt Hypo-chondrium
Rt Lumbar Region	Umbilical area	Lt Lumbar Region
Rt iliac Region	Hypo gastrium	Lt iliac Region

⊙ During appendix / Before appendectomy

↓  
PT NBO

side lying position

Avoid → Laxative  
Enema

Warm application

## ⊙ JUICE OF THE DIGESTIVE SYSTEM ⊙

(i) Saliva →

Secreted by salivary gland in Mouth.

(ii) Gastric →

Secreted by gastric gland of stomach

(iii) Pancreatic Juice →

Secreted by pancreas (isinar cell)

(iv) Bile →

Secreted by Liver and gall bladder.

↓

But synthesis only → Liver

Stone in → Gall bladder

(v) Succus Entericus →

Secreted by small intestine.

(6) Large intestine juice

↓  
↓  
↓  
conscience →

Secreted by Large intestine

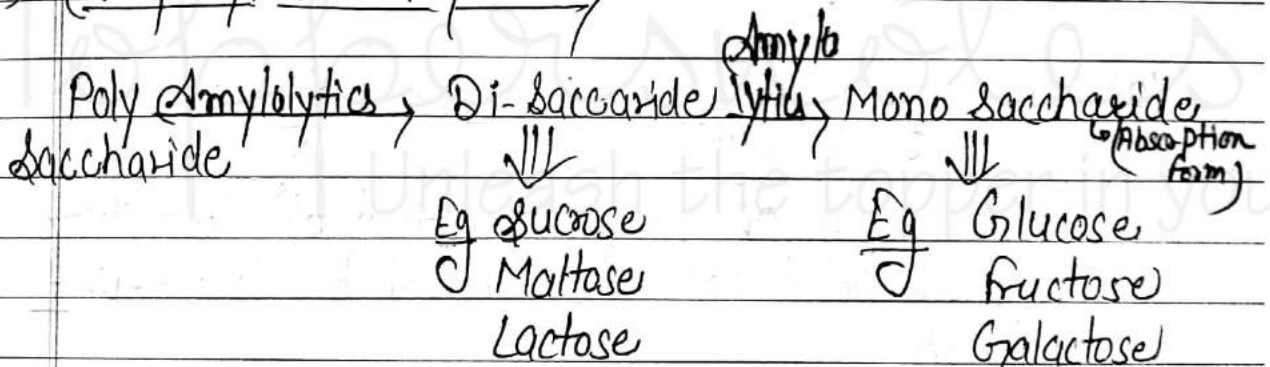
↓  
↓  
↓  
Bacteria → जो gas produce

↓  
↓  
↓  
Acidic medium होता है

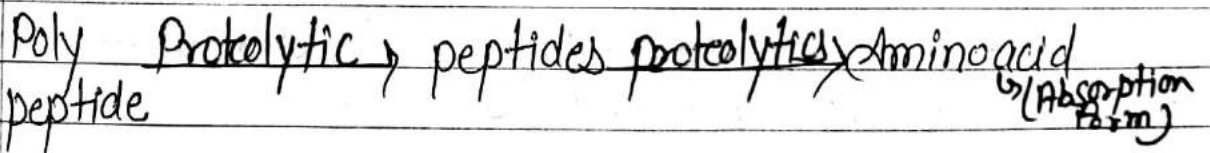
↓  
↓  
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जो Acidic medium को neutralize करता है (juice)

\* DIGESTIVE ENZYMES

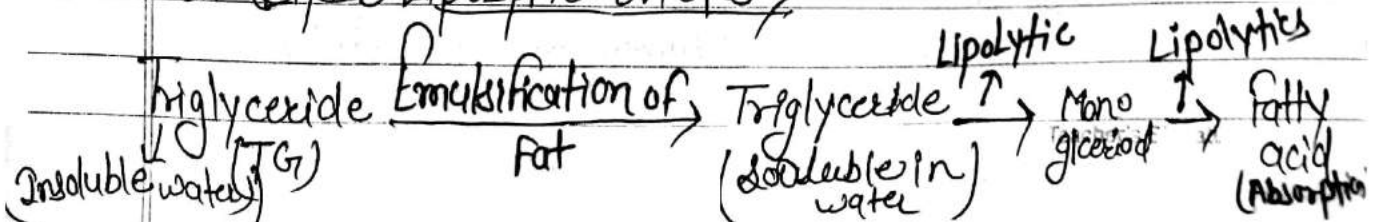
(1) Amylolytic Enzymes ⇒



(2) Proteolytic Enzymes



(3) Lipolytic Enzymes ⇒



Note [ Food digestion start → Mouth  
CHO digestion start → Mouth  
protein digestion start → Stomach  
fat digestion start → Small intestine

(4) Vitamins } directly absorbed from GIT to blood  
(5) Minerals }

(6) Fibres

## \* TERMINOLOGY

(1) Ingestion ⇒ Food is in Mouth

(2) Chewing / Mastication / Mechanical digestion

↓  
Breakdown of large particles of food into small particles of food by the help of the teeth

(3) Swallowing / Deglutition

Reaching of food from oral cavity to esophagus by voluntary and involuntary Reflex.

peristaltic Movement

Movement of GIT

(5) propulsion  $\Rightarrow$  Movement of ~~raw~~ food inside the GIT  $\bar{c}$  help of GIT peristaltic movement.

(6) Chemical digestion

Break-down of Large partical of food into the small partical by enzymatic action

(7) Absorption

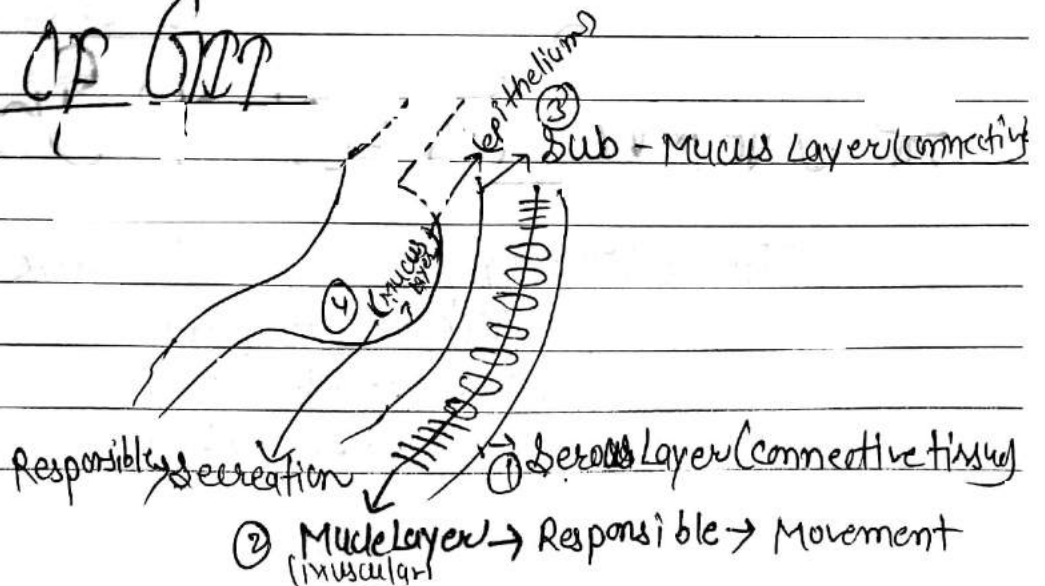
Movement of food particles from the lumen of GIT to blood stream

(8) Excretion

The elimination of waste product, via anus.

(9) Defecation  $\Rightarrow$  process of elimination

## \* LAYERS OF GIT





(Cardiac pt. में Avoid करीब → Rectum, Temp नहीं लेनी  
 ↓↓↓  
 Because stimulate vagus Nerve  
 ↓↓↓  
 (HR ↓se)

(1) Serous Layer ⇒ Outer layer

↓↓↓  
 Composed by ⇒ Connective tissue

(2) Muscular layer ⇒ Composed by → Muscl tissue

↓↓↓  
 All smooth muscle in GIT Except → (1) Mouth  
 (2) Anus

(A) oblique muscle

(B) Circular muscle

(C) Longitudinal muscle

\*\* muscular layer  
 responsible for  
 ↓↓↓

(3) sub-mucosa ⇒ layer  
 ↓↓↓  
 Composed by → Connective tissue  
 responsible → support the GIT mucosa  
 peristaltic movement

(4) Mucosa Layer ⇒ Inner layer

↓↓↓  
 Composed by → Epithelium tissue

Responsible ⇒ secretion

## \* NERVE SUPPLY OF DIGESTIVE SYS

The autonomic nerve fibres which supply to GIT are categories as  
 (i) sympathetic Nerve fiber  
 (ii) parasympathetic nerve fiber.

(1) Sympathetic Nerve Fibre

arises from → Thoro-  
Lumbar

Sympathetic stimulation  
Cause: →

- \* ↓ se & decretion of GIT
- \* ↓ se movement of GIT

(2) para sympathetic nerve fibre

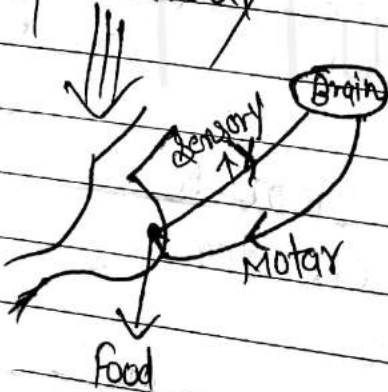
arises from → Vagus  
Nerve

Vagus stimulation  
Cause: →

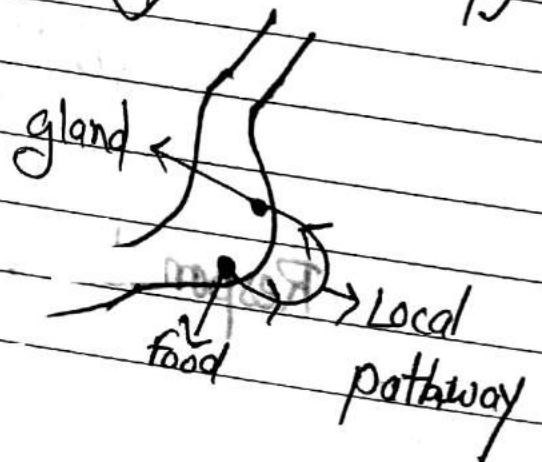
- \* ↑ se & decretion of GIT
- \* ↑ se Movement of GIT

\* The nerve pathway of GIT are distributed as: →

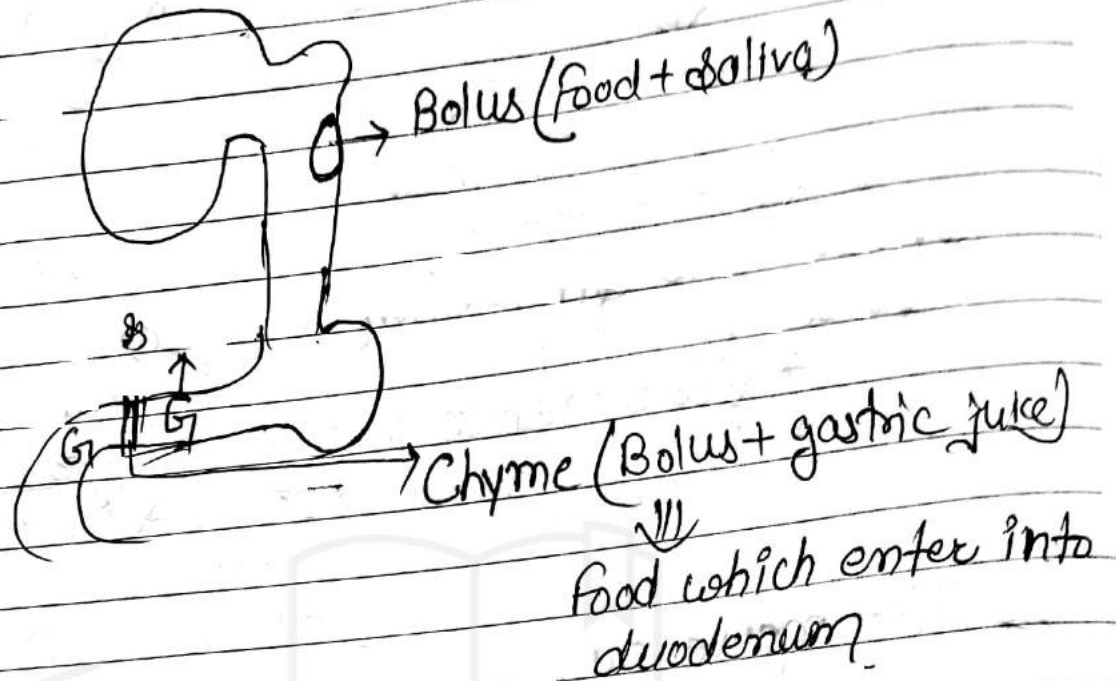
(1) Extrinsic Nerve pathway



(2) Intrinsic Nerve pathway (Local pathway)







## \* Hormones of GIT

(1) Gastrin ⇒ secreted by G cell

⇒ G cells are situated in

- (1) Pylors part of stomach
- (2) 1st part of duodenum

Responsible → for secretion of gastric juice and pancreatic juice

(2) Cholecystinin

⇒ Hormone secreted by duodenum  
stimulated → Gallbladder, Liver & pancreas

for secretion & inhibit gastrin

(3) Secretion ⇒  
 ↓↓↓  
 Hormone secreted by duodenum

stimulated → gall bladder, liver & pancreas for secretion & inhibits gastric

Note \* Most common Responsible for <sup>(G cells secrete)</sup>

- (1) Gastrin Hormone → stomach (Gastric juice)
- (2) Cholecystokinin → Gall bladder (Bile)
- (3) Secretin Hormone → pancreas (pancreatic juice)

## \* (1) MOUTH [ORAL / BUCCAL CAVITY] \*

(1) Teeth ⇒  
 ↓↓↓

Responsible for ⇒ Chewing / Mastication / Mechanical digestion

Formula ⇒	2 1 2 3	I →
	2 1 2 3	C →
	↓ ↓ ↓ ↓	P →
	I C P M	M →

(2) Tongue ⇒  
 ↓↓↓

Responsible for → Taste (Gustatory perception)  
 Tongue is a sense organ

(3) Posterior part  
of tongue  
↓  
(Bitter test)



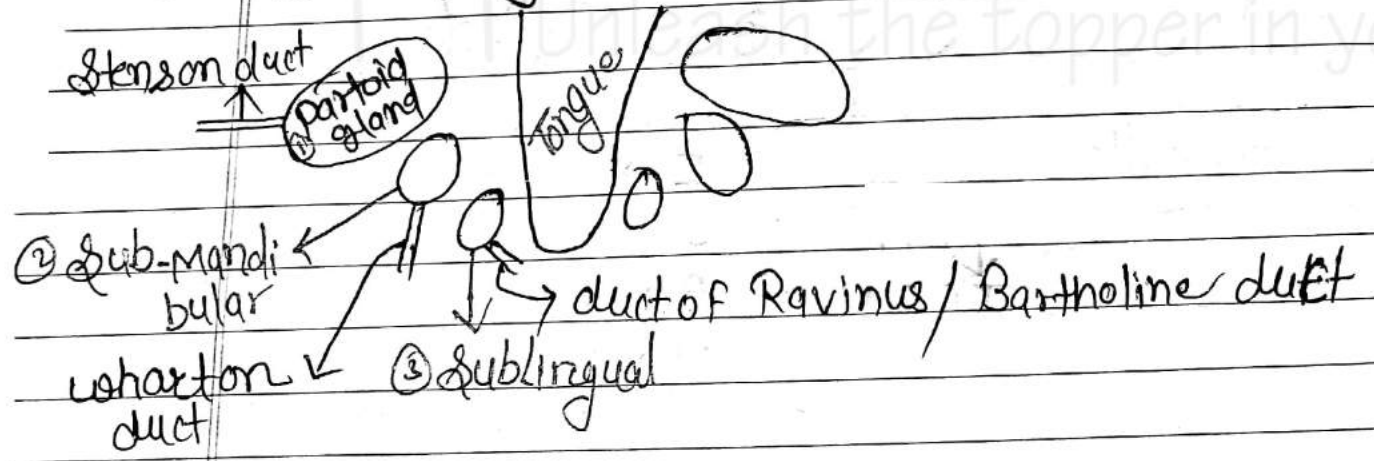
(2) Lateral part (Sour)

(1) Anterior / Tip of tongue receptors  
↓  
(Sweet test)  
Salt

function of Tongue

- (i) Rolling of food
- (ii) Taste
- (iii) Cleansing of teeth
- (iv) Role in speech
- (v) formation of Bolus

(3) Salivary gland (3 pairs) (Exocrine gland)



(1) parotid gland

