VOMITING

➡ UPPER GI TRACT RIDS ITSELF OF ITS CONTENTS

REASON :-

- EXCESSIVE IRRITATION
- OVERDISTENTION
- OVEREXCITATION

} OF UPPER GI TRACT (DUODENUM ESP.) ⇩ STRONG STIMULUS

BASIC MECHANISM :-

SENSORY SIGNALS ORIGINATE FROM PHARYNX, ESOPHAGUS, STOMACH, UPPER PART OF S. INTESTINE

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BY VAGAL & SYMPATHETIC AFFERENT FIBRES

⇩

BRAINSTEM – AREA PROSTEMA ≡ 'VOMITING CENTER'

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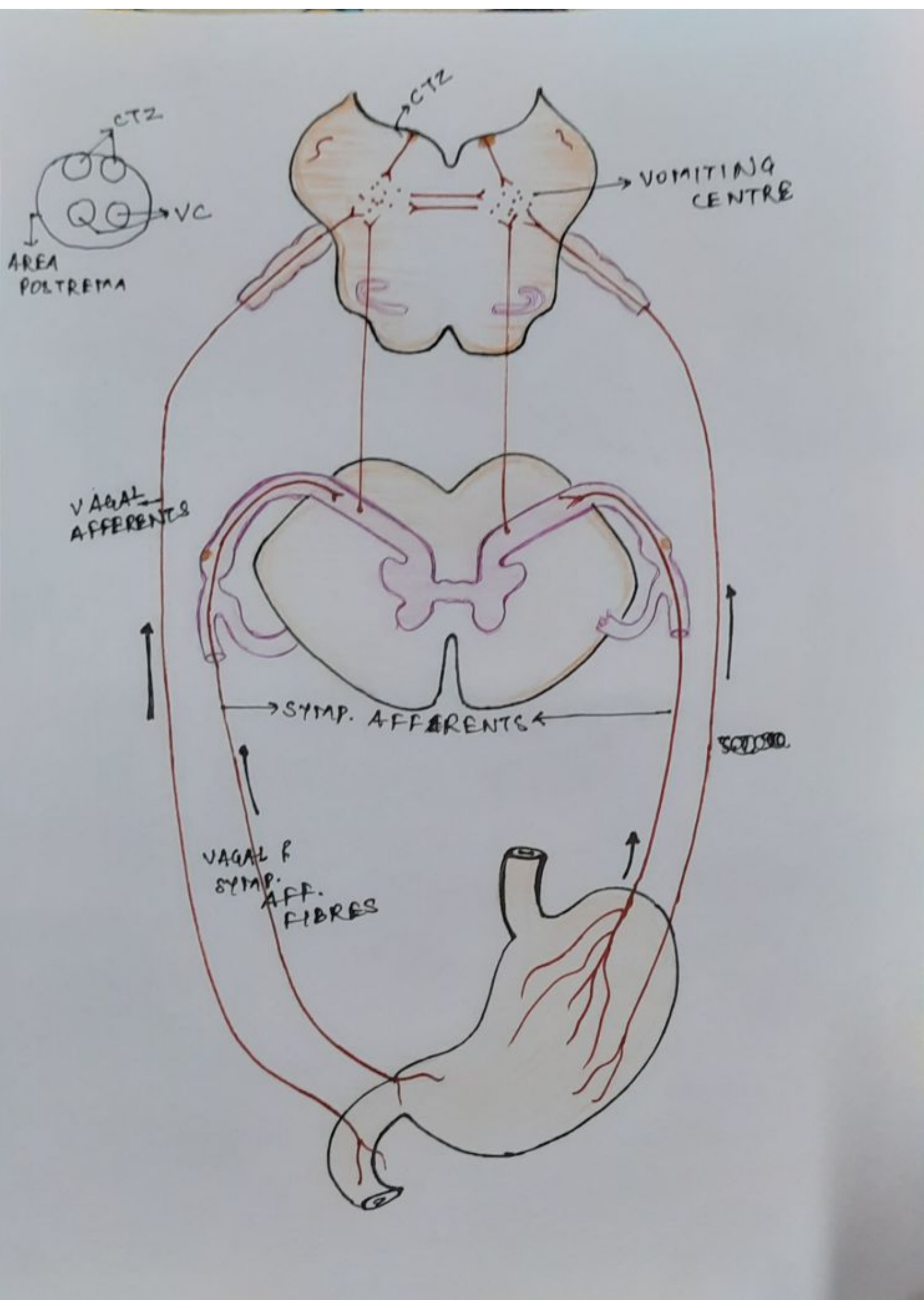
MOTOR IMPULSES → 5^{th}, 7^{th}, 9^{th}, 10^{th}, 12^{th} CN → TO UPPER GIT
→ VAGAL & SYMP. N. → TO LOWER GIT
→ SPINAL N. → DIAPHRAGM & ABDOMINAL MUSCLES

⇩

ANTIPERISTALSIS

⇩

VOMITING ACT


CTZ
VC
AREA POSTREMA
CTZ
VOMITING CENTRE
VAGAL AFFERENTS
SYMP. AFFERENTS
VAGAL & SYMP. AFF. FIBRES

ANTIPERISTALSIS :-

- PERISTALSIS UP THE DIGESTIVE TRACT
- OCCURS MANY MINUTES BEFORE VOMITING
- RATE → 2-3cm/sec
- PUSH LOWER S. INTESTINAL CONTENT TO DUODENUM & STOMACH WITHIN 3-5 MINTS.

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UPPER PORTION OF GIT, ESP. DUODENUM BECOMES OVERDISTENDED

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VOMITING ACT.

AT ONSET OF VOMITING,

- STRONG INTRINSIC CONTRACTN OCCURS IN BOTH DUODENUM & STOMACH
- PARTIAL RELAXATION OF ESOPHAGEAL-STOMACH SPHINCTER
- VOMITUS STARTS MOVING TO ESOPHAGUS

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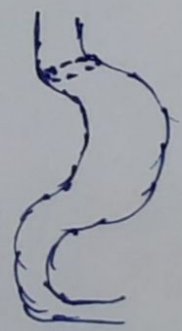
VOMITING ACT



VOMITING ACT :-

1) DEEP BREATH
2) RAISING OF HYOID BONE
3) LARYNX TO PULL UPPER ESOPHAGEAL SPHINCTER OPEN
4) CLOSING OF GLOTTIS TO PREVENT REFLUX OF VOMITUS IN LUNGS.
5) LIFTING OF SOFT PALATE TO CLOSE INTERNAL NARES.
6) STRONG DOWNWARD CONTRACTION OF DIAPHRAGM
7) SIMULTANEOUS CONTRACTION OF ALL ABDOMINAL WALL MUSCLES

⬇

SQUEEZING OF STOMACH BETWEEN DIAPHRAGM AND ABDOMINAL MUSCLES

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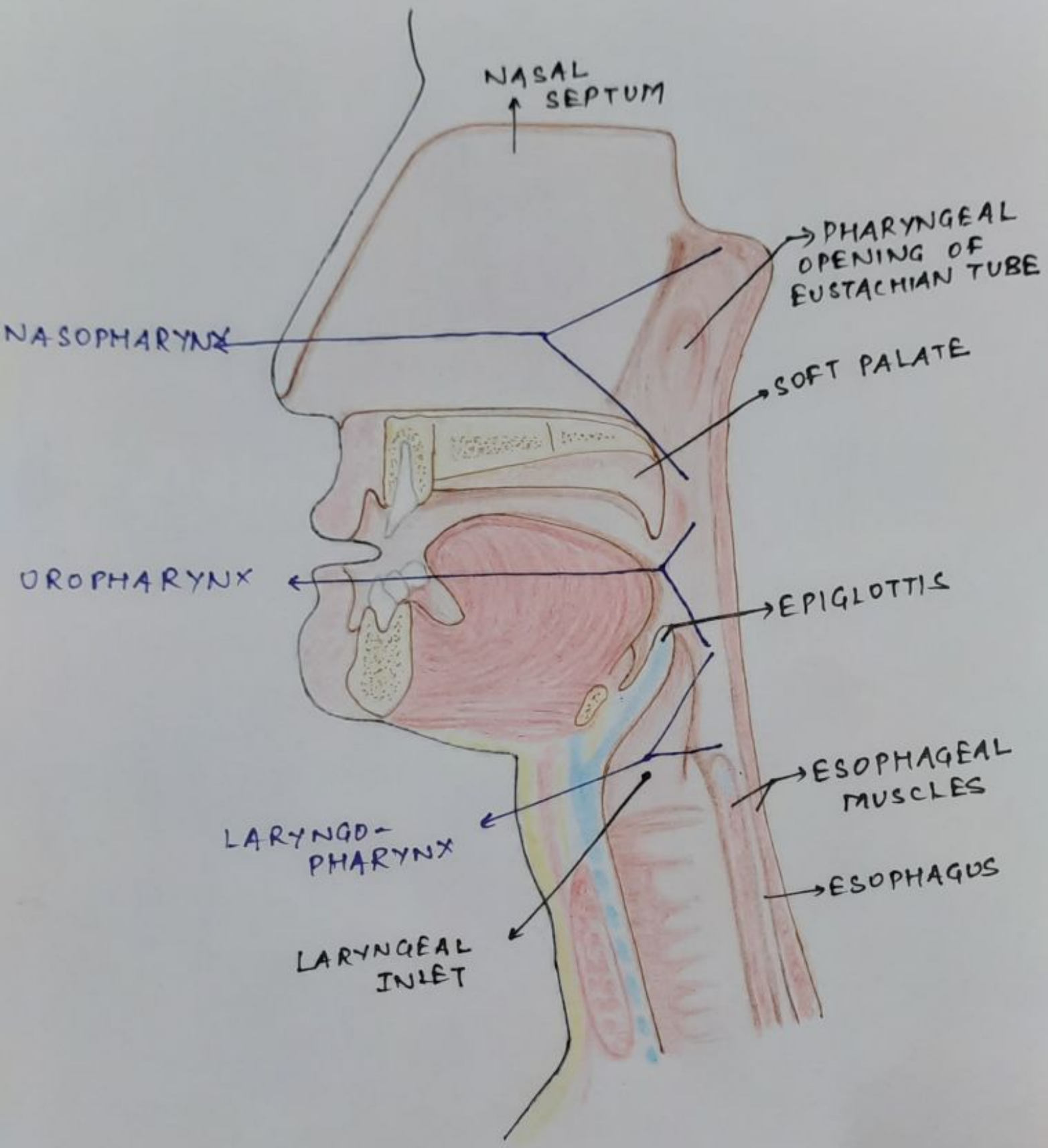
FINALLY, LOWER ESOPHAGEAL SPHINCTER OPENS COMPLETELY & EXPULSION OCCURS


NASAL SEPTUM
PHARYNGEAL OPENING OF EUSTACHIAN TUBE
NASOPHARYNX
SOFT PALATE
OROPHARYNX
EPIGLOTTIS
ESOPHAGEAL MUSCLES
LARYNGO-PHARYNX
ESOPHAGUS
LARYNGEAL INLET

CHEMORECEPTOR TRIGGER ZONE:-

MOTION ⊕ → STIMULATION OF CTZ IN AREA PROSTEMA

ELECTRICAL STIMULATION ⊕ → CTZ

DRUGS ⊕ → CTZ
- APOMORPHINE
- MORPHINE
- DIGITALIS DERIVATIVES

STIMULATION OF CTZ IN AREA PROSTEMA → VOMITING CENTRE → VOMITING

MOTION → RAPIDLY CHANGING DIRECTION

MOTION ⊕ → VESTIBULAR LABYRINTH OF INNER EAR → VESTIBULAR NUCLEI → CEREBELLUM → CHEMORECEPTOR TRIGGER ZONE → VOMITING CENTRE → VOMITING