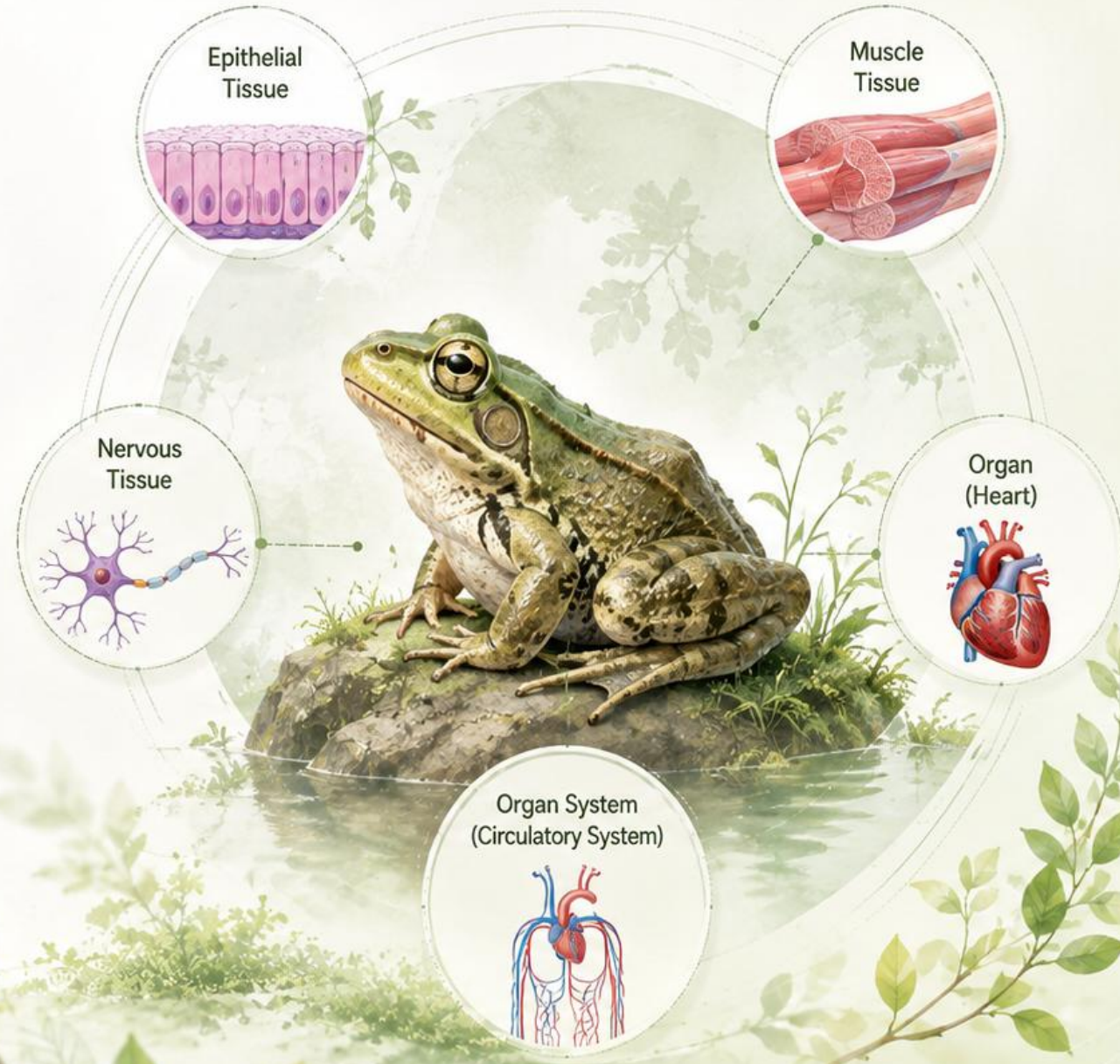
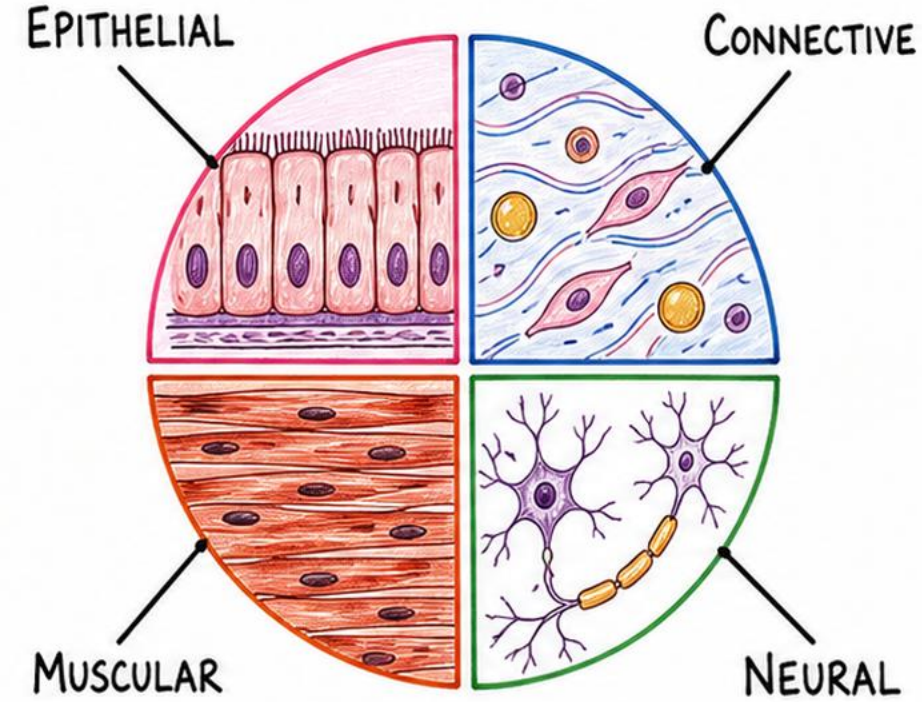
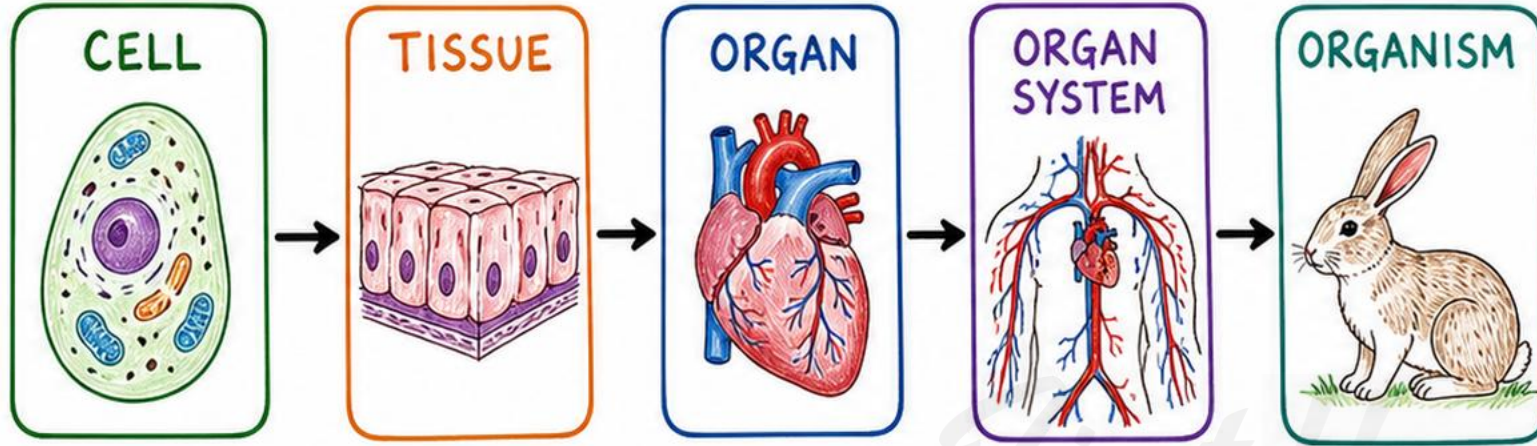


Chapter 7 : Structural Organisation in Animals

Biology Notes | Class 11



LEVELS OF ANIMAL ORGANISATION



- **TISSUE** = similar cells + intercellular substances performing a specific function.
- **ORGAN** = two or more tissues organised in a definite pattern.
- **ORGAN SYSTEM** = interacting organs performing a common function.
- Example: the heart contains all four basic tissue types.
- Division of labour improves efficiency, coordination and survival of the whole animal.

MORPHOLOGY - external form and visible features.

ANATOMY - internal organisation of organs.

* Increasing organ-system complexity can show evolutionary trends.

FROG IDENTITY, HABITAT & ADAPTATIONS

PHYLUM CHORDATA

CLASS AMPHIBIA

Indian bullfrog

NCERT legacy name:

Rana tigrina

Current accepted name:

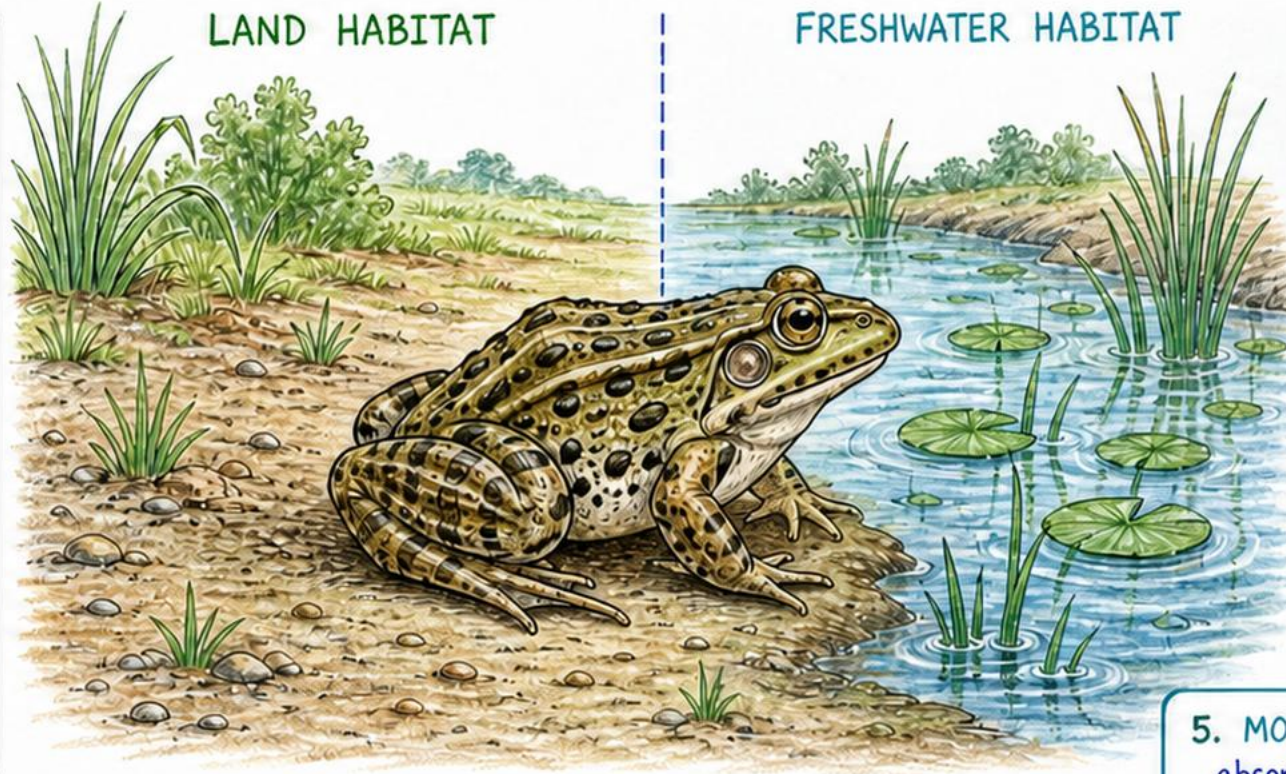
Hoplobatrachus tigerinus

Lives on land and in freshwater.

Representative amphibian
described in this chapter.

LAND HABITAT

FRESHWATER HABITAT



1. ECTOTHERMIC / POIKILOTHERMIC

body temperature varies with
environmental temperature.
(older term: cold-blooded)

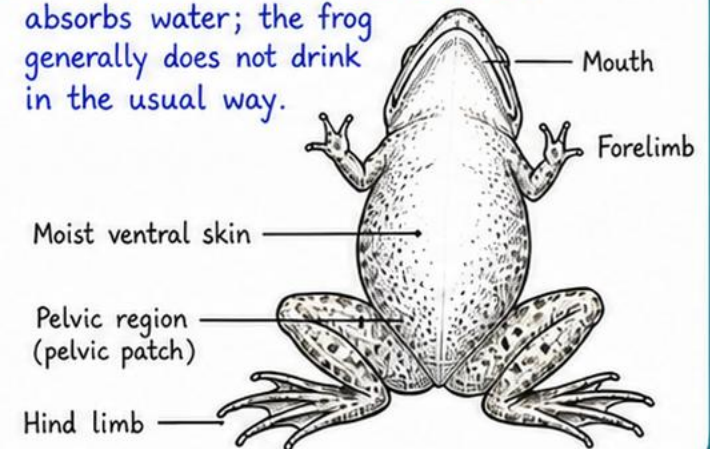
2. CAMOUFLAGE / CRYPSIS -

limited colour change and
background matching can
reduce detection.

Camouflage is not mimicry;
mimicry means resemblance
to another organism or object.

5. MOIST VENTRAL / PELVIC SKIN

absorbs water; the frog
generally does not drink
in the usual way.



3. AESTIVATION -

shelter in deep
burrows during
extreme summer
heat.



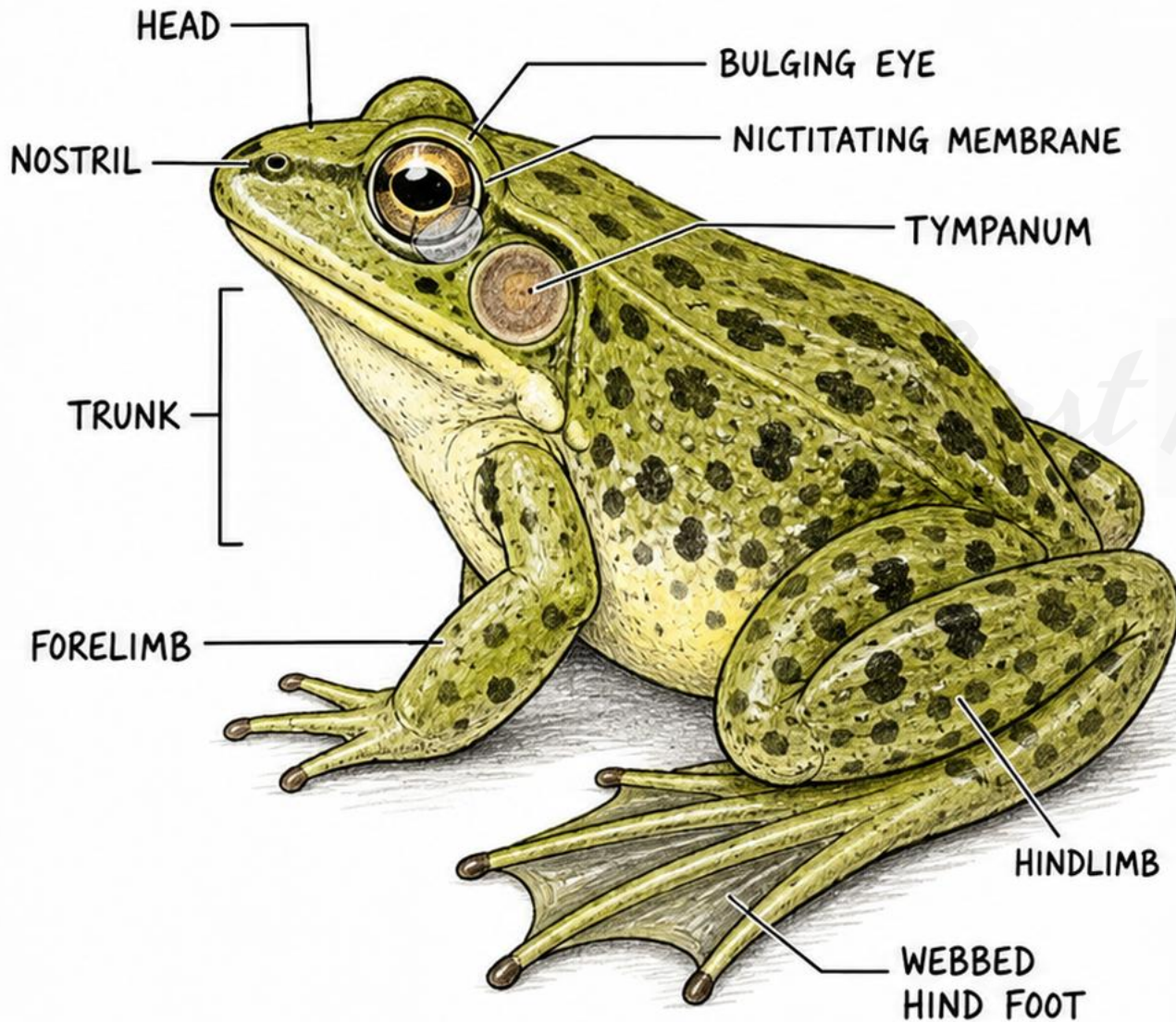
4. HIBERNATION -

shelter during
extreme winter
cold.



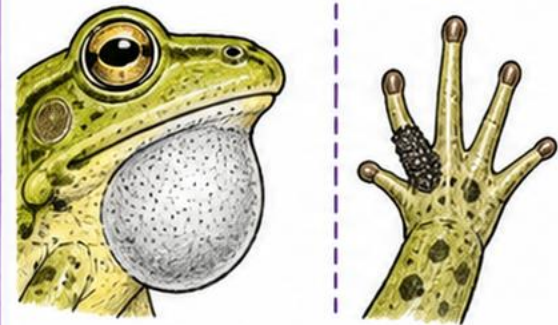
EXTERNAL MORPHOLOGY & SEXUAL DIMORPHISM

EXTERNAL LATERAL VIEW

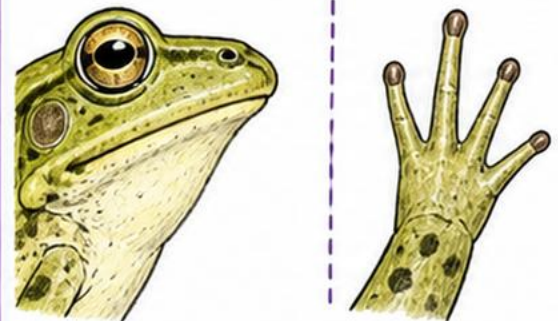


- Adult body: head + trunk; no distinct neck or tail.
- Skin: smooth, moist and mucus-coated.
- Dorsal: olive green with dark irregular spots.
- Ventral: uniformly pale yellow.
- Forelimb: 4 digits.
- Hindlimb: 5 webbed digits; larger and muscular.
- Functions: walking, leaping, swimming and burrowing.

MALE – vocal sacs present; nuptial (copulatory) pad on first forelimb digit.



FEMALE – vocal sacs absent; nuptial pad absent.

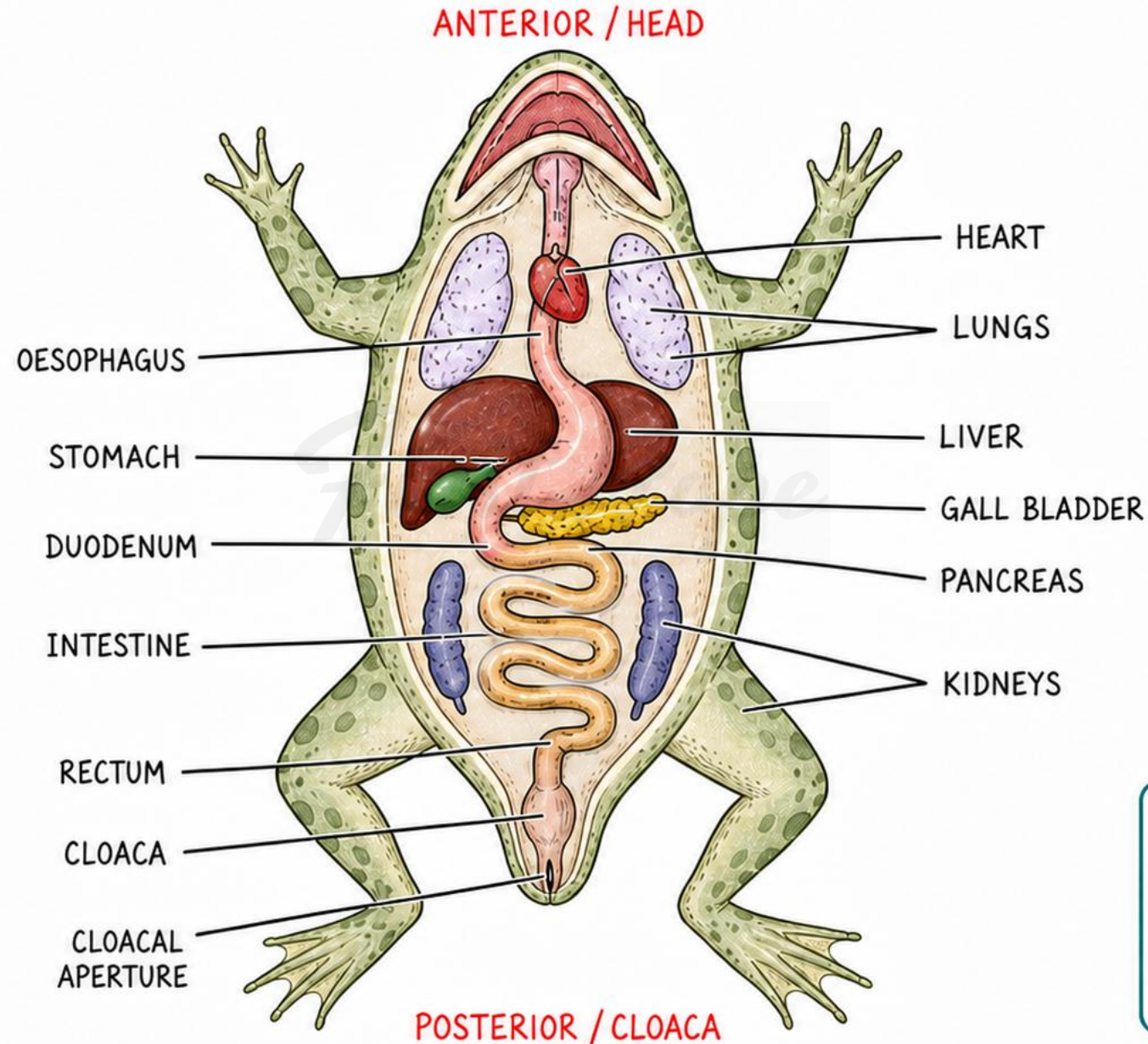


DIGESTIVE SYSTEM ANATOMY

Frog is carnivorous; its alimentary canal is comparatively short.

ALIMENTARY CANAL ROUTE

MOUTH
↓
BUCCOPHARYNGEAL CAVITY
↓
OESOPHAGUS
↓
STOMACH
↓
DUODENUM
↓
INTESTINE
↓
RECTUM
↓
CLOACA



LIVER

LIVER – makes bile.

GALL BLADDER

GALL BLADDER – stores bile.

PANCREAS

PANCREAS – secretes digestive enzymes.

COLOUR LEGEND

Alimentary canal	Lungs
Liver	Heart
Gall bladder	Kidneys
Pancreas	

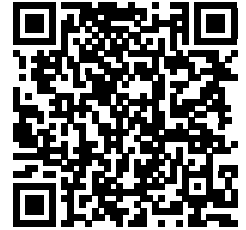


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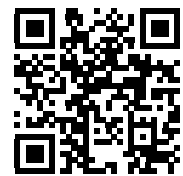


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