

Frog

Systematic position

- Phylum: Chordata
- Sub-phylum: Vertebrata
- Division: Gnathostomata
- Super class: Tetrapoda
- Class: Amphibia
- Genus: *Rana*
- Species: *tigrina*

Distribution

- They are cosmopolitan in distribution.

Habitat

- Found in both land and water.
- In water, they are usually found in fresh water river, ditches, damp places.

Why it lives near by water?

- Protection
- Respiration
- Reproduction
- Feeding

Habits

- **Resting:** Frog rest in land with in a squatting position.
- **Feeding:** It is a carnivorous animal and feeds on earthworm, insects, spiders etc.
- **Hibernation:** Winter sleep (consume store energy, do not take any food)
- **Aestivation:** Summer sleep
- **Croaking sound:** The sound made by male frog during breeding season.
- **Locomotion:** Jumping and swimming
- **Parental care:** No parental care
- **Association:** Solitary (single)
- **Protection:** Release urine during caught
- **Poikilothermic:** Body temperature fluctuate according to the environmental temperature

External features of frog

- **Size:** Size of the frog varies according to the age from 10 to 20 cm in length.
- **Shape:** It is spindle shaped, dorsoventrally flattened and bilaterally symmetrical.
- **Coloration:** The dorsal surface of the body is green with dark patches but the ventral surface is white or pale yellow in colour. It saves them from enemies.
- **Body division:** The body is divided into head and trunk. Head and trunk are not differentiated due to the absence of neck.
 - i. Head:** It is triangular in outline with pointed snout in front. Mouth is located ventrally almost at the tip of the snout as a wide slit-like aperture which helps in ingestion of food. Two small openings called external nostrils are present at the tip of snout, above the mouth. They have bulging eye balls and the eyes are covered by nictitating membrane.
 - ii. Trunk:** The head is broadly joined with the trunk due to the absence of neck. It is short and flattened from above to downward. The posterior end of the trunk is round. Cloaca is present at the posterior end which helps to discharge the faeces, urine and reproductive bodies (sperm and egg). The pairs of limbs arise from the trunk—one pair of forelimbs and one pair of hind limbs. The hind limbs are longer, stronger and highly muscular than the forelimbs.

Digestive system

- It is mainly concerned with the ingestion of food, its digestion, absorption of digested food and finally elimination of undigested food.
- It consist of alimentary canal and digestive glands.

1. Alimentary canal

- It is a long, coiled tube that begins from mouth and ends in cloaca. It includes mouth, buccal cavity, pharynx, esophagus, stomach, small intestine, large intestine and cloaca.
- **Mouth:** A wide opening called mouth is situated at the anterior end of the snout. It is bounded by upper and lower jaw.
- **Buccal cavity:** The mouth leads into a wide cavity called buccal cavity. It contains mucus glands which **secrete mucus**. It helps to lubricate food. There are no salivary gland in frog.
- **Pharynx:** The buccal cavity **narrows behind to form pharynx**. They are considered together and known as bucco-pharyngeal cavity. There is a large **transverse opening called gullet** which leads into esophagus.
- **Esophagus:** It is short and wide tubular structure which runs from gullet of bucco-pharynx to the stomach. It opens into stomach.

- **Stomach:** The esophagus open into a large thick walled tubular sac known as stomach. It lies on the **left side of the body cavity**. It takes part in **storage and digestion of food**. It opens into small intestine.
- **Small intestine:** It is **long, coiled and narrow tube** and measures about **30 cm long**. It is made up of two parts.
 - i. **Duodenum:** It is a small **anterior part of small intestine**. It is a narrow tube which turns forward parallel to stomach forming a **U shaped structure**. It receive a **common hepato-pancreatic duct** from liver and pancreas.
 - ii. **Ileum:** It is **longest part of alimentary canal**. It is coiled tube like structure which makes several loops.
- **Large intestine:** The ileum opens behind into the **large intestine or rectum**. It is a wide tube which measures about **4 cm long**. In the rectum, the undigested food material is stored and covered into the faecal matter. It opens into cloaca.
- **Cloaca:** It is small sac like structure. The anus and urino-genital aperture open into it. It is used as common passage for the removal of undigested food or faeces, urine and ova are released out.

Digestive glands: It consists of two glands.

- a) Liver: It is the largest digestive gland and is reddish brown in color. It is composed of **two main lobes i.e. the right lobe and the left lobes**. Between the two lobes there is a **thin walled, round, greenish sac called gall bladder**. The gall bladder stores **bile** secreted by the **liver**. The duct which arise from **different liver lobes are called hepatic duct** and duct which arise from the **gall bladder is called cystic duct**. The hepatic and cystic duct joint to form common bile duct. It runs through from pancreas and joins the pancreatic duct to form hepato-pancreatic duct which ultimately opens into duodenum.

Function of liver

- It neutralizes the acidity of the chyme.
- It stores excess sugar as glycogen
- It maintain the concentration of protein in blood.
- It stores copper and iron and forms vitamin A
- It destroys the injured RBC.

Pancreas

- It is a long, flattened, irregular lobed gland of yellowish color. Its secretion is known as pancreatic juice. It also contains compact group of cells distributed in its connective tissue which are called Islet of Langerhans. These cells are endocrine in nature and produce hormones called insulin and glucagon.
- Glucose $\xrightarrow{\text{Insulin}}$ Glycogen
- Glycogen $\xrightarrow{\text{Glucagon}}$ Glucose

Functions of pancrease

- The insulin causes conversion of excess glucose into glycogen which stored in liver.
- The glucagon hormone converts glycogen into glucose. Thus the combined action of glucagon and insulin in the body regulates the blood sugar level.

