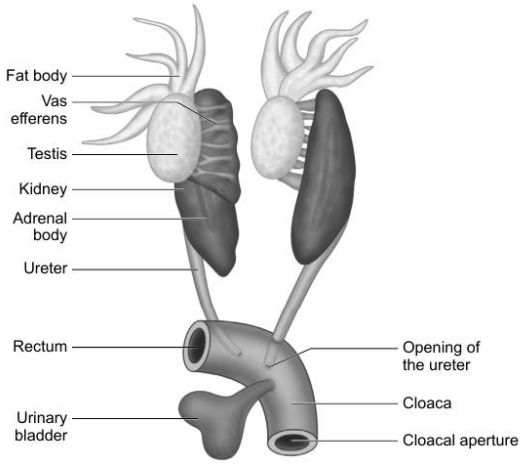


Figure 4.23 *Rana hexadactyla* - Male Urinogenital System

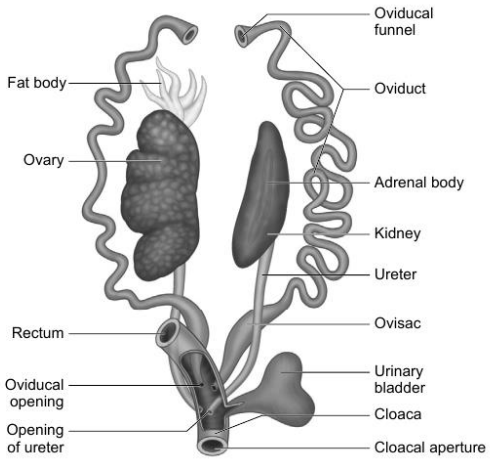


Figure 4.24 *Rana hexadactyla* - Female Urinogenital System

-Female reproductive system consists of paired **ovaries,** attached to the kidneys, and dorsal body wall by folds of peritoneum called mesovarium.
-There is a pair of coiled **oviducts** lying on the sides of the kidney. Each oviduct opens into the bodycavity at the anterior end by a funnel like opening called ostia.
-Unlike the male frog, the female frog has separate genital ducts distinct from ureters. Posteriorly the oviducts dilated to form **ovisacs** before they open into cloaca.
-Ovisacs store the eggs temporarily before they are sent out through the cloaca. Fertilization is external.

CHAPTER ; 5 DIGESTION AND ABSORPTION

Evaluation

1.Choose the incorrect sentence from the following:
a. Bile juice emulsifies the fat.
b. Chyme is a digestive acidic food in stomach.
c. Pancreatic juice converts lipid into fatty acid and glycerol.
d. Enterokinase stimulates the secretion of pancreatic juice.
2. What is chyme….?-
a. The process of conversion of fat into small droplets.
b. The process of conversion of micelles substances of glycerol into fatty droplet.
c. The process of preparation of incompletely digested acidic food through gastric juice.
d. The process of preparation of completely digested liquid food in midgut.
3. Which of the following hormones stimulate the production of pancreatic juice and bicarbonate?
a. Angiotensin and epinephrine
b. Gastrin and insulin
c. Cholecysokinin and secretin
d. Insulin and glucagon
4. The sphincter of Oddi guards
a. Hepatopancreatic duct
b. Common bile duct
c. Pancreatic duct
d. Cystic duct
5. In small intestine, active absorption occurs in case of
a. Glucose
b. Amino acids
c. Na+
d. All the above
6. Which one is incorrectly matched?

a. Pepsin – stomach
b. Renin – liver
c. Trypsin – intestine
d. Ptyalin – mouth

7. Absorption of glycerol, fatty acids and monoglycerides takes place by
a. Lymph vessels within villi b. Walls of stomach
c. Colon d. Capillaries within villi

8. First step in digestion of fat is
a. Emulsification b. Enzyme action
c. Absorption by lacteals d. Storage in adipose tissue

9. Enterokinase takes part in the conversion of
a. Pepsinogen into pepsin **b. Trypsinogen into trypsin**
c. Protein into polypetide d. Caseinogen into casein

10. Which of the following combinations are not matched?

Column I	Column II
a. Bilirubin and	**(i) intestinalbiliverdin juice**
b. Hydrolysis of starch	(ii) Amylases
c. Digestion of fat	(iii) Lipases
d. Salivary gland	(iv) Parotid

11. Match column I with column II and choose the correct option

Column – I	Column – II
(P) Small intestine	(i) Largest factory
(Q) Pancreas	(ii) Absorpstion of glucose
(R) Liver	(iii) Carrying electrolytic solution
(S) Colon	(iv) Digestion and absorption

a. (P-iv) (Q -iii) (R- i) (S – ii)
b. (P-iii) (Q -ii) (R- i) (S – iv)
c. (P-iv) (Q -iii) (R- i) (S – ii)
d. (P-ii) (Q -iv) (R- iii) (S – i)

12. Match column I with column II and choose the correct option

Column – I	Column – II
(P) Small intestine	(i) 23 cm
(Q) Large intestine	(ii) 4 meter
(R) Oesophagus	(iii) 12.5 cm
(S) Pharynx	(iv) 1.5 meter

b.(P-ii) (Q-iv) (R-i) (S-iii)

13. Match column I with column II and choose the correct option

Column – I	Column – II
(P) Lipase	(i) Starch
(Q) Pepsin	(ii) Cassein
(R) Renin	(iii) Protein
(S) Ptyalin	(iv) Lipid

c.(P-iv) (Q-iii) (R-ii) (S-i)

14. Which of the following is not the function of liver?

a. Production of insulin b. Detoxifi cation

c. Storage of glycogen d. Production of bile

15. Assertion : (A) Large intestine also shows the presence of villi like small intestine.
Reason: (B) Absorption of water takes place in large intestine.

a. Both A and B are true and B is the correct explanation of A

b. Both A and B are true but B is not the correct explanation of A

c. A is true but B is false

d. A is false but B is true

16. Which of the following is not true regarding intestinal villi?

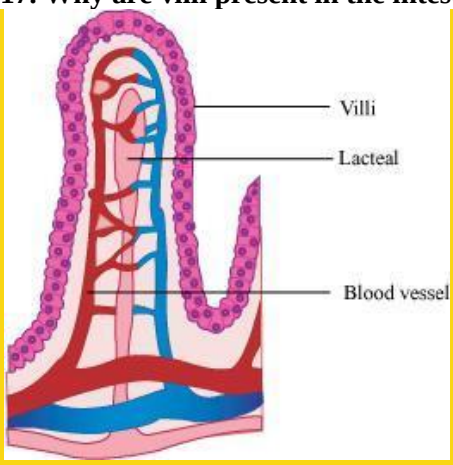
a. Th ey possess microvilli.

b. Th ey increase the surface area.

c. Th ey are supplied with capillaries and the lacteal vessels.

d. They only participate in digestion of fats.

17. Why are villi present in the intestine and not in the stomach?



The mucosal wall of the small intestine forms millions of tiny finger-like projections known as villi. These villi increase the surface area for more efficient food absorption.

Within these villi, there are numerous blood vessels that absorb the digested products of proteins and carbohydrates, carrying them to the blood stream. The villi also contain lymph vessels for absorbing the products of fat-digestion. From the blood stream, the absorbed food is finally delivered to each and every cell of the body.

The mucosal walls of the stomach form irregular folds known as rugae. These help in increasing the surface area to volume ratio of the expanding the stomach.

-There is no villi in stomach because absorption and assimilation takes place only in Intestine.

18. Bile juice contains no digestive enzymes, yet it is important for digestion. Why?

-Although it does not **contain** any **digestive enzymes**, it plays an **important** role in the **digestion** of fats. **Bile juice** has **bile** pigments such as bilirubin and biliverdin. These break down large fat globules into smaller globules so that the pancreatic**enzymes** can easily act on them

- The liver secrete bile. Bile helps the small intestine by breaking downs fats and making them easier to absorb

19. List the chemical changes that starch molecule undergoes from the time it reaches the small intestine.

First a little amount of starch is converted into MALTOSE in mouth due to the presence of salivary amylase.

Later it goes to the small intestine through oesophagus and stomach but without any digestion still of starch.
In small intestine starch is converted into MALTOSE in the presence of PANCREATIC AMYLASE which convert the rest protein into MALTOSE.
MALTOSE then later converted into glucose in the presence of maltase another enzyme secreted by small intestine.
1.Maltose…..Maltase….> Glucose+Glucose
2.Sucrose….Sucrase….>Glucose+Fractose
3.Lactose….Lactase….>Glucose+Galactose

20. How do proteins differ from fats in their energy value and their role in the body?

- Fat has a caloric value of 9.45 Kcal and a physiological fuel value of 9 Kcal per gram.
- The caloric value and physiological fuel value of one gram of protein are 5.65 Kcal and 4 Kcal respectively.

21. Digestive secretions are secreted only when needed. Discuss.

-The smell, sight and taste as well as the mechanical stimulation of food in the mouth, triggers a reflex action which results in the secretion of saliva.
-The mechanical digestion starts in the mouth by grinding and chewing of food. It is called mastication.
-The saliva contain water, electrolytes (Na+, K+, Cl–, HCO3), salivary amylase (ptyalin)
-polysaccharides……ptyaline…> disaccharides.

Stomach;

-pepsinogen…..Hcl….> pepsin,
-protein….pepsin….> protease+peptones,
-casinogen….Renin….> casin

Intestine;

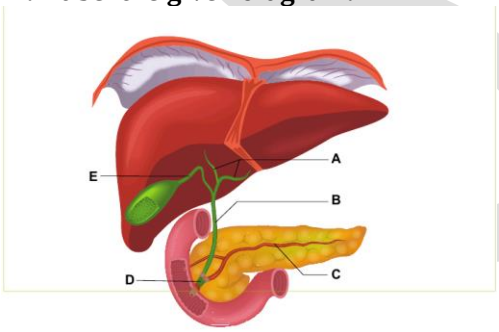
Pancreas

Trypsinogen….enterokinase….> Trypsin,
Chymotrypsinogen….trypsin….> chymotrypsin.
Starch….amylase….> maltose.
Glycerides….Lipase….>fatty acids+glycerols

Bile;

-Fat…..>chillomicron

22. Label the given diagram.



A.Right hepatic duct of liver
B.Common bile duct
C.Pancreatic duct (duct of wirsung)
D.Sphincter of oddi
E.Cystic duct.