



BIOLOGY

BOOKS - PEARSON IIT JEE

FOUNDATION

**LIFE PROCESSES IN HUMAN BEING-I
(DIGESTIVE AND EXCRETORY
SYSTEMS)**

Quik Recap

1. Man cannot digest cellulose but cow and other herbivorous animals can take food containing cellulose because-



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2. The person who suffered from jaundice is not supposed to consume oily food. Give reason.



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3. Give reasons for the following.

Gall bladder removal may cause diarrhoea.



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4. Give reasons for the following.

Removal of ileum may result in the deficiency of iron in the long run.



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5. The immediate treatment for cholera is to give glucose-saline drip or ORS. Explain with respect to the functioning of kidneys.



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6. In case of chronic kidney failure, dialysis is the most effective treatment. How is it carried out? What purpose does it serve?



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Test Your Concepts Fill In The Blanks

1. The process of addition of simplified food into the living components of cell is known as ____.



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2. ____ is the muscular tube which connects the nasal cavity to the larynx.



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3. Removal of undigested food is known as ____.



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4. The arrangement of teeth in a particular species is called ____.



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5. The tongue is covered with the moist tissue called ____.



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6. The ___ glands are located in the lining of the stomach which secrete gastric juice.



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7. ___ is a muscular valve which controls the passage of food from the stomach into the intestine.



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8. ___ is the portion where ileum is connected to the large intestine.



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9. ___ is a blood protein which is required for clotting of blood.



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10. ___ are the finger-like projections arising from the walls of the small intestine.



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11. _____ is the outermost region of kidney.



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12. ___ Kidneys are shaped and reddish brown in colour.



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13. Kidney on the_____ side is slightly higher than the kidney on the side.



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14. Each kidney is constituted of numerous ___which are the functional units of excretory system.



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15. A network of blood capillaries present inside the outer cavity of Bowman's capsule is known as_____.



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Test Your Concepts Select The Correct Alternatives

1. Identify the stage of nutrition associated with the intake of food.

A. Ingestion

B. Digestion

C. Absorption

D. Assimilation

Answer: A



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2. The term digestion corresponds to which of the actual processes?

A. Ingestion

B. Digestion

C. Absorption

D. Assimilation

Answer: B



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3. Which organ produces heparin?

A. Pancreas

B. Liver

C. Small intestine

D. Duodenum

Answer: B



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4. Which among the following organs is not a part of alimentary canal?

A. Mouth

B. Pharynx

C. Liver

D. Stomach

Answer: C



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5. Identify the digestive glands which are present within the alimentary canal?

A. Salivary glands

B. Pancreas

C. Liver

D. All of these

Answer: A



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6. Which structure separates the mouth cavity from nasal cavity?

A. Tongue

B. Salivary glands

C. Palate

D. Upper and lower jaws

Answer: C



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7. Identify the teeth which have chisel-like structures which help in cutting and biting the food.

A. Canines

B. Incisors

C. Premolars

D. Molars

Answer: B



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8. In which part of the tongue, the bitter taste is perceived?

A. Tip of the tongue

B. Either side of the front part of the tongue

C. Either side of the posterior part of the tongue

D. Posterior part of the tongue.

Answer: D



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9. Identify the name given to the partially digested food entering duodenum from stomach.

A. Bolus

B. Succus entericus

C. Chyme

D. Faeces

Answer: C



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10. Match the entries of Column 1 with those of Column 2.

Column 1

Column 2

A. Small intestine

(i) Gall bladder

B. Large intestine

(ii) Amylase

C. Pancreas

(iii) Colon

D. Liver

(iv) Duodenum

A

B

C

D

(a) (iv)

(iii)

(ii)

(i)

(b) (iii)

(ii)

(i)

(iv)

(c) (i)

(ii)

(iii)

(iv)

(d) (iv)

(iii)

(i)

(ii)



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11. Which organ in the excretory system expels the urine out from the body?

A. Kidneys

B. Ureters

C. Urinary bladder

D. Urethra

Answer: D



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12. Which organ helps in the separation of waste from blood stream in the form urine?

A. Kidneys

B. Ureters

C. Urinary bladder

D. Urethra

Answer: A



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13. Which region of the kidney is composed of cone-shaped structures called renal pyramids?

- A. Cortex
- B. Bowman's capsule
- C. Medulla
- D. Renal pelvis

Answer: C



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14. Which two regions together constitute Malpighian capsule?

A. Loop of Henle and Bowman's capsule.

B. Bowman's capsule and glomerulus

C. Proximal convoluted tubule and glomerulus

D. Distal convoluted tubule and proximal convoluted tubule.

Answer: B



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15. Consumption of which of the following diets increases the content of urea in the urine?

A. Rice

B. Ghee

C. Peanuts

D. Vegetables

Answer: C



16. Match Column 1 with Column 2.

Column 1	Column 2
A. Bowman's capsule	(i) Pars recta
B. Proximal convoluted tubule	(ii) Macula densa
C. Renal pelvis	(iii) Glomerulus
D. Distal convoluted tubule	(iv) Inner most region.

	A	B	C	D
(a)	(iii)	(i)	(iv)	(ii)
(b)	(iii)	(ii)	(i)	(iv)
(c)	(i)	(ii)	(iii)	(iv)
(d)	(iv)	(iii)	(i)	(ii)

Master The Concepts Knowledge And Understanding

1. Mention the different organs that are part of alimentary canal.



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2. Name the different glands that are associated with the digestive system.



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3. Complete the following table.

Type of Teeth	Number in each jaw	Location	Function
Incisors		Last part of jaw	Tearing the flesh
			Crushing and chewing



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4. What do you mean by dental formula?

Explain the dental formula in humans.



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5. How many enzymes are present in pancreatic juice? Name and mention their role in digestion.



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6. What do you mean by emulsification? Mention its significance.



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7. Explain the process of digestion in small intestine.



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8. Identify and explain the structure and function of the gland which secretes the enzyme amylase.



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9. Explain the anatomy and function of tongue.



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10. What is epiglottis? What is its role in the digestive system?



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11. Explain the functions of liver in the Regulation of blood sugar.



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12. Explain the functions of liver in the Deamination.



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13. Complete the table:

Pancreatic Juices	Activity
Trypsin (an enzyme)	Converts complex carbohydrates to simpler molecules, maltose



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14. Explain the assimilation of fats during the process of digestion.



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15. Define the Excretion.



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16. Define the Osmoregulation .



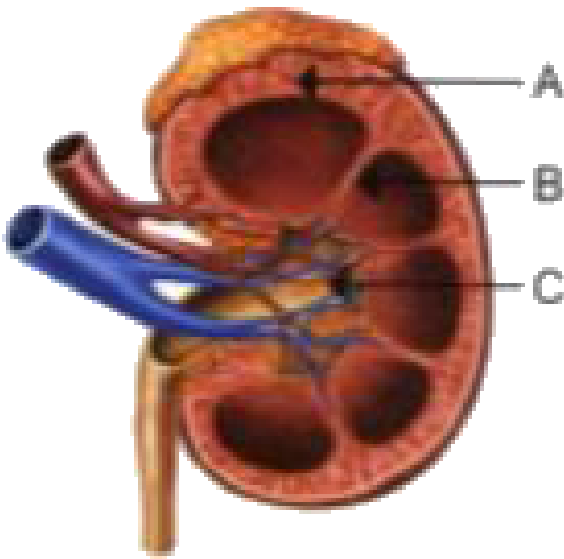
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17. Name the different organs associated with excretory system.



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18. On the basis of the diagram given, answer the following questions.

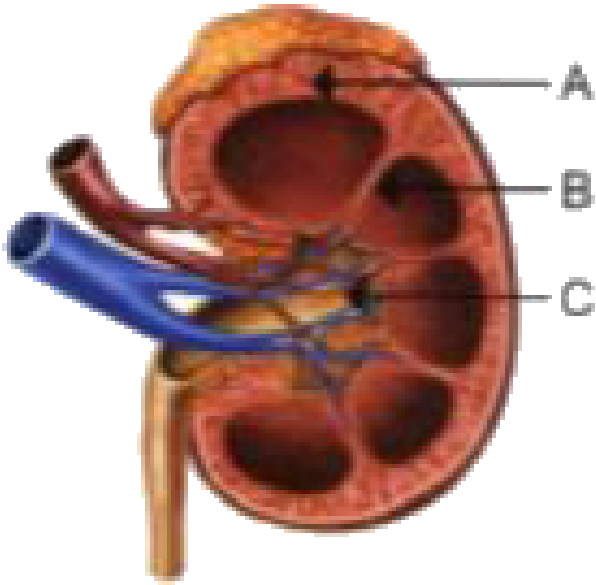


Identify A, B, C and D.



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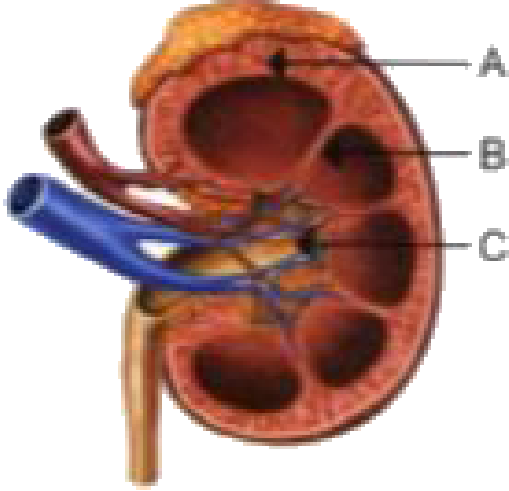
19. On the basis of the diagram given, answer the following questions.



What is the structural and function unit of the organ given in the diagram.

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20. On the basis of the diagram given, answer the following questions.



Name the parts of the above structural and functional unit.

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21. Name and explain the process that takes place in the network of blood capillaries

present outside the Bowman's capsule during the formation of urine.



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22. Name and explain the process that occurs in distal convoluted tube during the formation of urine.



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23. Explain the process of selective reabsorption.



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24. Lactose intolerance is a common health problem in elderly people. Give reason.



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25. How are cavities in teeth formed?



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26. Different areas of tongue are responsible for different tastes. Explain.



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27. Although appendix is considered a vestigial organ in human being, it plays certain role. Explain



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28. How do bile salts emulsify fats?



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29. Explain the role of liver in maintaining glucose level in blood throughout the day.



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30. Why do enzymes act in a particular range of temperature?



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31. Enzymes are substrate (the molecule on which an enzyme acts) specific. Give the reason.



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32. HCl is secreted in stomach to promote the activity of enzymes. Why does this HCl does not corrode the lining of the stomach?



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33. When we chew a piece of bread for some time, we feel sweet taste in our mouth. Give reason.



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34. The diameter of efferent arteriole is less than that of afferent arteriole. Give reason.



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35. Why is the process taking place in proximal convoluted tubule called reabsorption? What is the significance of this process?



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36. How does the formation of stones take place in kidney?



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37. Liver is the main detoxifying organ in the body. Justify.



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38. Why are patients suffering from kidney diseases advised to take low sodium salts?



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39. A disease, gout indicates the malfunction of kidney. Give reason.



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40. Hyperglycemia increases the frequency of urination. Explain.



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41. The concentration of creatinine in the blood is measured to examine the condition of kidney. Give reason.



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1. Assertion (A): Dentition in an animal depends on the mode of feeding.

Reason (R): All herbivorous animals have similar dentition.

A. Both A and R are true and R is the correct explanation for A.

B. Both A and R are true but R is not the correct explanation for A.

C. A is true and R is false.

D. A is false and R is true.

Answer:



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2. Assertion (A): Both pepsin and rennin can simplify milk protein.

Reason (R): Pepsin and rennin are protein digesting enzymes.



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3. Assertion (A): Digestion does not take place in large intestine.

Reason (R): Undigested food gets converted to faeces in large intestine.



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4. Assertion (A): Bile juice helps in digestion of food in small intestine.

Reason (R): Bile juice contains sodium salts.



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5. Assertion (A): The process taking place in proximal convoluted tubule is called selective reabsorption.

Reason (R): Along with waste material, some nutrients also remain in the filtrate.



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6. Assertion (A): Osmoregulation is one of the functions of kidney.

Reason (R): Nutrients are transported to the

bloodstream from the renal tubule by the process of osmosis.



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7. Assertion (A): The urine passed by a person is thicker in summer than in winter.

Reason (R): Perspiration is more in summer than in winter.



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8. Assertion (A): Perspiration helps to maintain our body temperature.

Reason (R): Perspiration expels nitrogenous wastes from our body.



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9. Assertion (A): Malpighian capsule completely separates the waste material from the nutrients present in the bloodstream.

Reason (R): Selective reabsorption, secretion

and transportation of urine are the functions of renal tubule.



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Assessment Tests Fill In The Blanks

1. The organs which lost their original function through evolution are known as ____.



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2. The final segment of the large intestine_____.



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3. The bowel movement is controlled by___.



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4. The undigested matter of the ingested food is called_____.



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5. The faeces is thrown out from the rectum through anus. This process is called ____.



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6. ____ process takes place in proximal convoluted tubule of nephrons.



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7. _____ region of kidney receives urine from the collecting duct.



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Assessment Tests Select The Correct Alternatives

1. Identify the flap-like structure which closes the opening of the larynx when we swallow the food.

A. Epiglottis

B. Larynx

C. Oesophagus

D. Palate

Answer: A



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2. In which part of the small intestine does the absorption of nutrients takes place?

A. Duodenum

B. Jejunum

C. Ileum

D. Both (a) and (b)

Answer: B



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3. How many number of teeth are present in adult human being?

A. 34

B. 33

C. 32

D. 36

Answer: C



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4. Identify the teeth which are conical and pointed at the end and used for tearing the flesh.

A. Canines

B. Incisors

C. Premolars

D. Molars

Answer: A



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5. Which type of teeth grow at the age of 18?

A. Premolar

B. Canines

C. Incisors

D. Wisdom teeth

Answer: D



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6. Identify the teeth which are present on each side of both the jaws and used for grinding.

A. Canines

B. Incisors

C. Premolars

D. Molars

Answer: D



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7. Which part of the tongue is responsible for sweet taste?

A. Tip of the tongue

B. Either side of the front part of the tongue

C. Either side of the posterior part of the tongue.

D. Posterior part of the tongue.

Answer: A



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8. Which part of the proximal convoluted tubule receives the urine from the glomerulus?

- A. Pars convoluta
- B. Pars recta
- C. Loop of henle
- D. Bowman's capsule

Answer: A



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Assessment Tests True Or False

1. The undigested residue of the food is processed in rectum.



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2. Gall bladder produces bile, a yellow-brown fluid.



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3. Fibrinogen does not help in clotting the blood.



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4. The voluntary movement of muscles of digestive tract for the transportation of food is called peristalsis.



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1. Rennin: Milk protein: : Gastric lipase : ____.



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2. Lipase: Fat :: ____: starches.



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3. Sublingual: Salivary glands :: liver : ____



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4. Loop of henle : ____ ::Cortex: Kidney.



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Assessment Tests Answer The Questions

1. What do you mean by absorption of food?

Explain.



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2. Name the valve which controls the passage of food from the stomach to the intestine.



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3. Identify the organ where 90 per cent of the food gets digested and also explain its different parts.



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4. Name the organ which absorbs the water from the undigested food and is present in right of the lower abdomen.



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5. How many parts is the organ mentioned in the previous question divided and explain them.



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6. Complete the following table:

Enzymes	Functions
Erepsin	Maltose to glucose (simplest sugar)
Sucrase	Lactose to glucose and galactose
Lipase	



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7. What are the different steps that are involved in formation of urine?



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