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Subject – Biology Class- 12 Topic – Excretory system of human

8. The vessel carrying blood in glom... (c) afferent art...
(a) efferent arteriole (b) renal artery

Very Short Answer Type Questions

1. What is excretion ? 43
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3. What are uric acid excreting animals called? Uricotelic
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3. Describe the other excretory organs of human.
4. Describe different dieseases related to excretion.

nswers—1. (c), **2.** (b), **3.** (d), **4.** (a), **5.** (b), **6.** (a), **7.** (b), **8.** (c).

Excretory System Of Human

★ Ques / Ans :-

1. What is excretion ?
   To excrete out the nitrogenous waste materials from the body is known as excretion.

2. What are called ammonia excreting animals ?
   Ammonotelic animals.

3. What are uric acid excreting animals called ?
   Uricotelic animals.

4. What is ultrafiltration ?
   The process of filteration from the wall of blood capillaries of glomerulus of excretory and other utilizibal substance is known as ultrafiltration.

5. Write the name of the unit of excretion in kidney ?
   Nephron.

6. Name the blood vessels coming out of glomerulus of kidney.
   Efferent arteriole.

7. Where is glomerulus found ? What is its main

function ?
Glomerulus is found in Bowman's capsule. It's main function is 'Ultrafiltration'.

8. What is Malpighian body?
The anterior part of each uriniferous tubule is called malpighian ~~body~~.

9. Where is Henle's loop found?
Between DCT and PCT

10. What are column of Bertini ?
Some narrow elongation of cortical region are embedded in the outer medullary part of kidney. These are called renal columns of Bertini.

11. Write main function of kidneys in ~~blood~~ body?
Excretion.

12. What is haemodialysis ?
When the kidney stop working, then urea in quantity increases in blood. This state is known as uremia. Artificial renal device is needed for excreting out urea and other waste materials. Therefore this process is known as haemodialysis.

13. What are excretory organs other than kidneys in human ? Describe
1. Skin — Extra water and some nitrogenous

substances are excreted out of the body by the sweat glands situated in human skin in the form of perspiration.

2. Lungs — CO_2 is an excretory substance formed during cellular respiration. It is excreted out of the body by the process of respiration.

3. Liver — The hepatic cells are helpful in transforming nitrogenous part of amino acids more than necessary into amonia and amonia into less harmful urea to transform it into urine to excrete it out. Bile pigment are also formed by liver.

14. What do you understand by kidney transplantation? Explain in short.

When the kidney of a diseased person stops working completely then they may not be treated and kidneys from healthy persons are planted. This kidney transfer process is known as kidney transplantation. The person giving kidney is known as kidney donor. Kidney donor should be close relative person, because blood and tissue structure is nearly same of the both relatives.

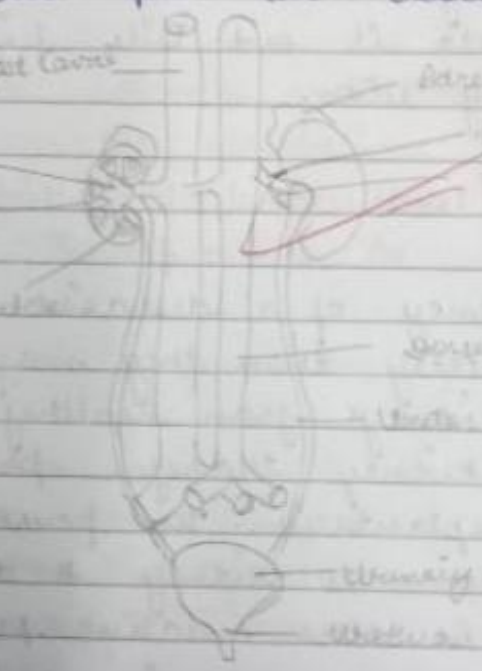
If the kidney of an unknown person is transplanted then the immune system of the diseased may reject the new kidney. As such the new kidney could not work and the patient may die.

To face this, the immune system is inactivated

with some specific medicines. Due to this, probability of acceptance by the diseased person for transplanted kidney increases more.

15. Describe excretory system of human with figures.

In human, kidneys are main excretory organs. Besides kidneys, ureter, urinary bladder and urinary passage or urethra also take part in excretion.



I. External structure of kidney: In human, one pair of kidneys are found, which are situated at dorsal side of abdominal cavity on both the sides of vertebral column. The right kidney is some what anterior to the left kidney. Both the kidneys are attached with the dorsal wall of abdomen by means

of a fold of membranous, thin peritoneum. Kidney are formed from the embryonal mesoderm and these are of the metanephric type.

Human kidney are dark red and bean shaped. Each kidney is about 10-11 cm in length, 5-6 cm in width. The outer surface of the kidney is convex and the inner surface concave. Pit-like structure on the concave side, is called hilum. Renal Artery and nerve enter kidney from the hilum side. Renal vein, lymph duct and ureter comes out of the kidney. A cap like endocrine gland adrenal glands, covers the upper end of the kidney.

2. Ureters: A narrow tube with thick muscular walls comes out from the hilum of kidney, is called ureter. Its proximal part in kidney is wide and funnel shaped, which is called pelvis. Both the ureters, starting from the pelvis open below in urinary bladder. The walls of ureters are thick and muscular. These muscles do forward urine, develop peristaltic waves.

3. Urinary bladder: It is a muscular bag like structure in which urine is collected permanently. There are three layers in its walls—

External Layer: Serosa of peritoneum, middle unstriped muscle layer and internal - mucous layer. Urinary bladder is cone shaped of which the upper part is wide and lower part is narrow. The narrow part opens by a

aperture in urethra. This aperture has a sphincter made of striped muscles. In male, the urinary bladder is situated in front of rectum and in female just above vagina, 700 - 800 mL urine could be collected in urinary bladder.

4. Urethra :- A duct comes out from the neck of the urinary bladder, which is called urethra. Urine is excreted out through urethra. In males urethra is about 15cm long and passes through the penis. Urine and seman both do pass out through it. In females, urethra is about 4cm long and only urine passes out through it.
In males urethra is made by three parts—

i) Prostatic or urethral part — It is 2.5 cm long which passes through the prostate gland. Both the vasa deferentia opens in this part.

ii) Membranous part — This is the small part in between prostate gland & penis.

iii) Penile part — This is about 15cm long passage, which opens externally on the top of glans of penis as urinogenital aperture, passing through corpus spongiosum of the penis.

16. Explain the functional anatomy of human uniferous tubule.
Uniferous tubules are the functional and structural units of kidney. There are about

10-12 lack of thin long and coiled tubules found in each kidney of human. These tubules are known as renal tubules and nephrons each tubule can be divided in following parts-

1. Malpighian body: The anterior part of each uniferous tubule is called malpighian body, which is formed by two parts —

(a) Bowman's Capsule: This is a cup shaped structure in which the glomerulus is inserted. The wall of Bowman's capsule is thin and double layered. The inner layer contains specific type of cells which are called podocytes. The processes of podocytes and the wall of blood capillaries together form the thin glomerulus membrane. In this membrane there are found many micropores, fenestra, due to which the membrane is more permeable.

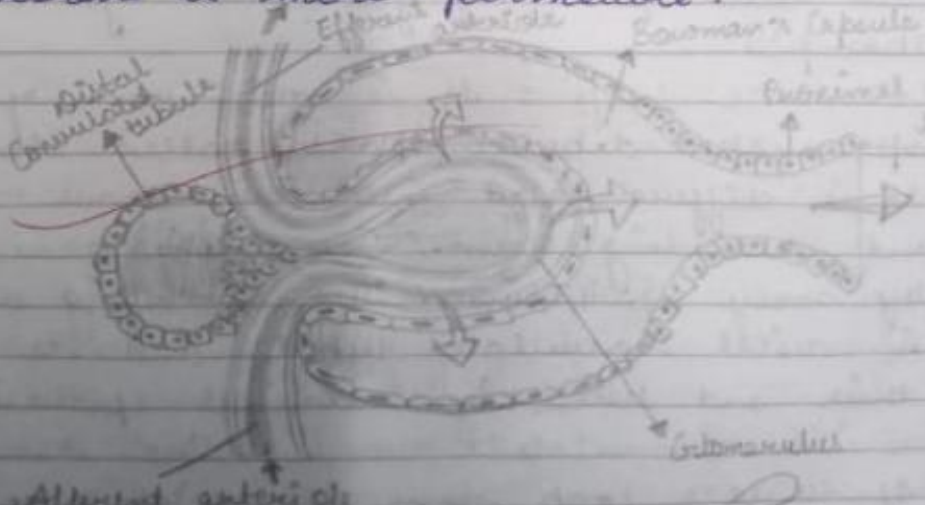


Fig: Bowman's Capsule