

Q9) What is 'Black Hole'? How black holes are formed and discovered?

Answer 1- Black Hole

Black hole is also known as 'collapsar'.

An object with strong gravitational pull, which attracts everything towards itself. Black hole has strong density, which increases its gravitational pull and captures everything inside it.

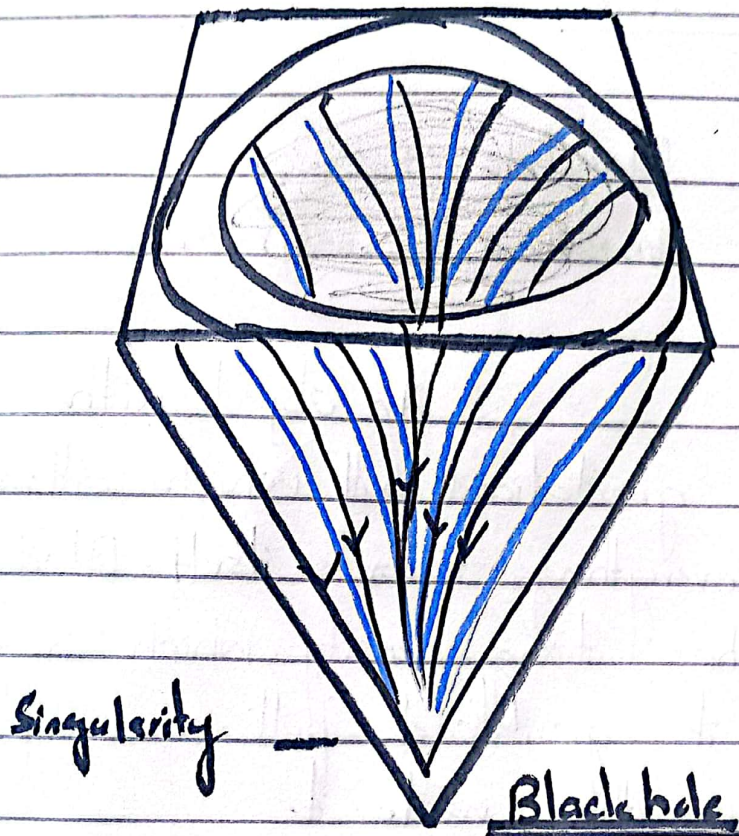
2- Formation of black hole

Black hole due to its strong gravitational pull attracts every thing as,

$$d \propto m$$

The greater density of black hole

attracts greater masses. Resultantly even light can not escape from it.



3- Discovery of black hole

" In 1971, black hole was discovered."

Cygnus X-1 discovered 'black hole'. A dense, huge

ball which was collapsing everything inside itself.

"Blackhole is a huge
collapsar, which
collapses even huge
stars."

(Cygnus, X-1, 1971)
The New York Times

This shows discovery of black hole.

Qb) Write two applications of each of the following electromagnetic radiations:

Answer is Ultraviolet

"Ultraviolets are the most dangerous, come mostly from Sun."

Applications

1)

They convert sunlight into

vitamin D.

- 2) These are source of visualizing bodily-inner disorders through machinery.

ii) Infrared

"Infrared are less dangerous than ultraviolet."

Applications

- 1) These transfer rays for longer-distance transmission.
- 2) These are used in remotes of machinery devices.

iii) Microwaves

"Microwaves are even less dangerous than infrared."

Applications

- 1) These are used in microwave oven.
- 2) These are also used in cellphones.

iv) Radio waves

"Radio waves are least energy possessing."

- 1) These are used in radio signals.
- 2) These are also used in remotes.

v) X-rays

"X-rays are known as Roentgen rays."

Applications

- 1) These are used to visualize intern

al body parts.

↳ These are used, especially for medical purpose.

Q (e) i) Why bat and whale are considered as mammals?

Answer - Mammals

"Animals which give birth to babies, and also feed them milk, called mammals."

Mammals are animals, which after giving birth to their babies, feed them milk.

"Bat and whale also give birth and feed milk to babies."

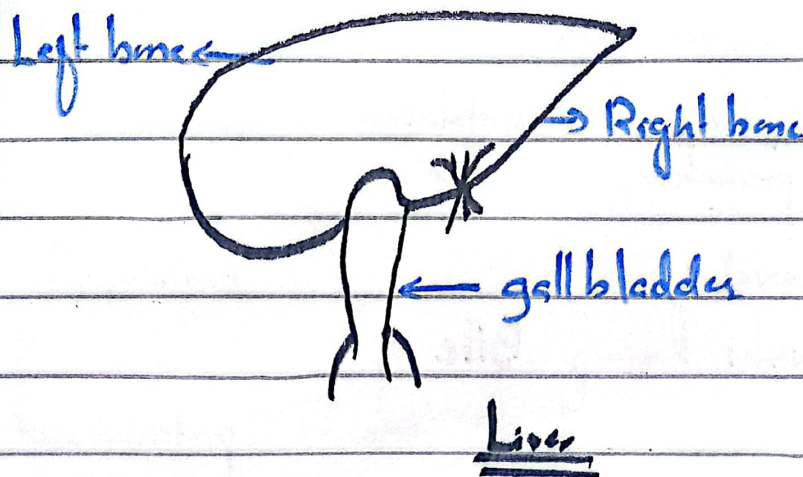
Hence, so bat and whale are known as mammals.

Q.11) Note on 'liver juice' Bile

Answer:- Bile

'Bile is also known as liver juice.'

Bile is a waste-product containing fluid, salts, minerals, vitamins etc. Bile is secreted by liver through gall bladder.



2- Functions of liver juice - 'bile'

"Bile is a source of metabolites"

Bile helps metabolism

of body. Further,

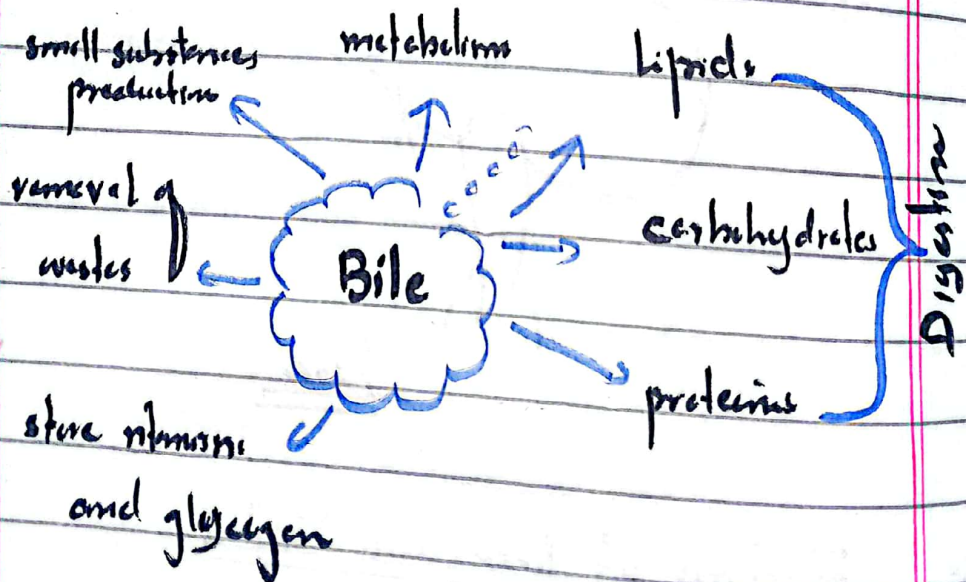
i) Bile helps in digestion of carbohydrates, vitamins, lipids, and proteins.

Q ii) Bile secretes vitamins, minerals, and bilirubin as waste-products.

iii) Bile store fats and lipids as glycogen.

Ans

iv) Bile breakdown large particles into small particles.



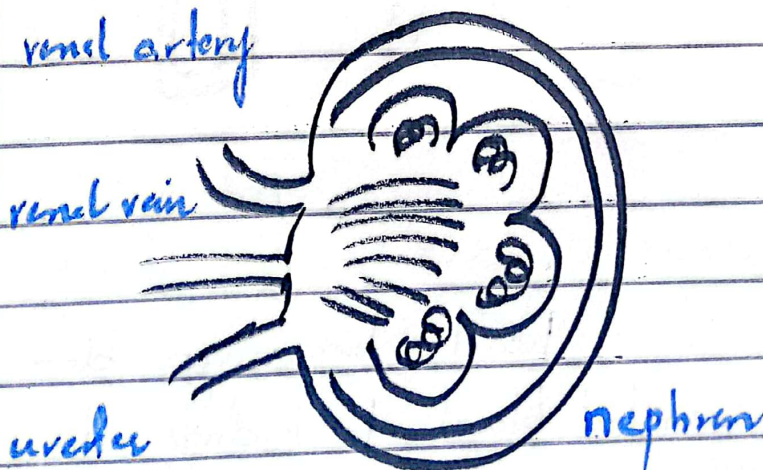
Qd How urine is formed? Describe role of kidney in excretion.

Answer Kidney

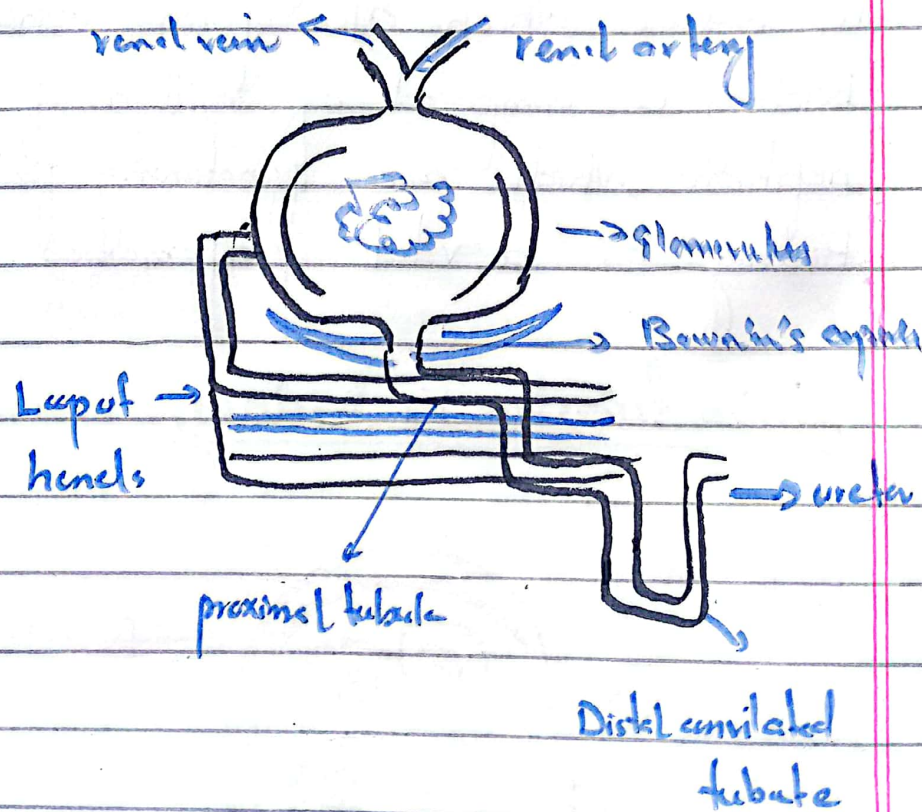
'Kidney is a bean shaped excretory organ.'

Kidney is an excretory organ, which also forms urine. Kidney is composed of millions of nephrons which are functioning for kidney as a vital performance!

2- Urine formation in kidney

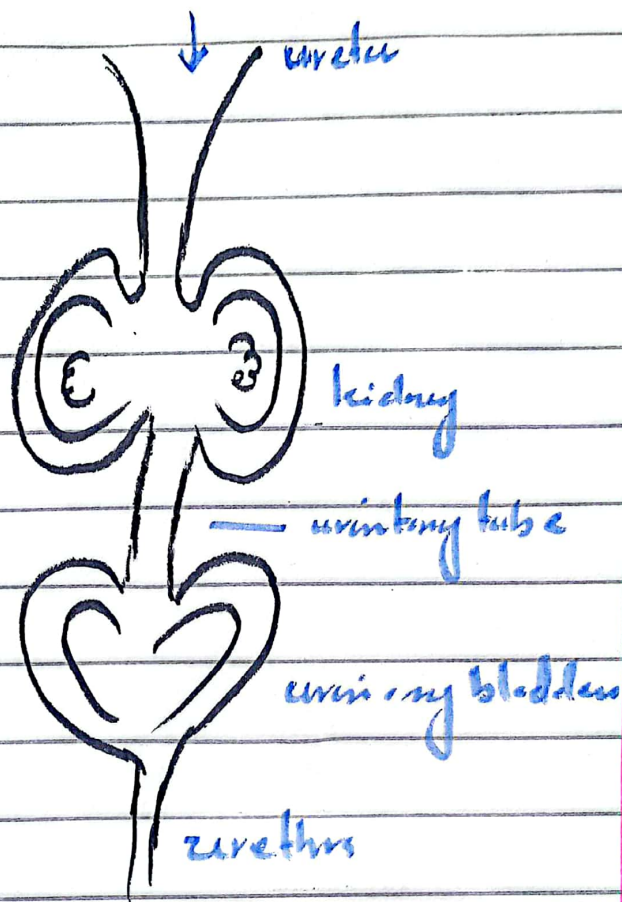


- i) Renal artery: carries blood to kidney for purification.
- ii) Renal vein: excretes out filtered blood.
- iii) Ureter: excretes waste-product, urine.



Renal artery carries de-oxygenated blood to kidney. It

filtrate in glomerules containing capillaries, Further, it goes to Bowman's capsule and blood comes out from kidney through renal vein, while urine after filtration of blood goes down from ureter.



Kidney Structure

This shows how kidney excretes waste-product - urine after filtration of blood.