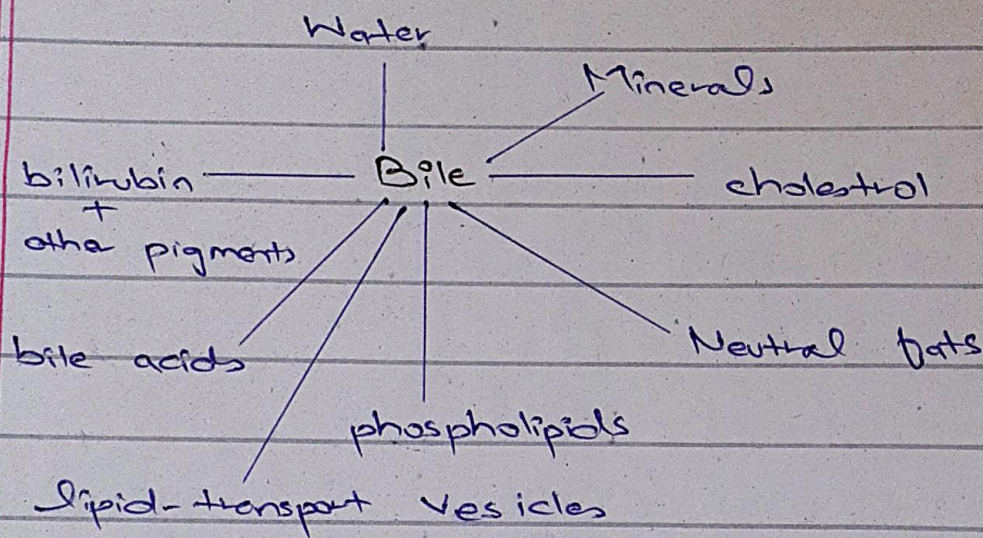


## Section - I

Q.4a Write a note on liver juice "Bile"

**Bile:** Bile is a yellowish-greenish digestive fluid produced in the liver and stored in the gallbladder.

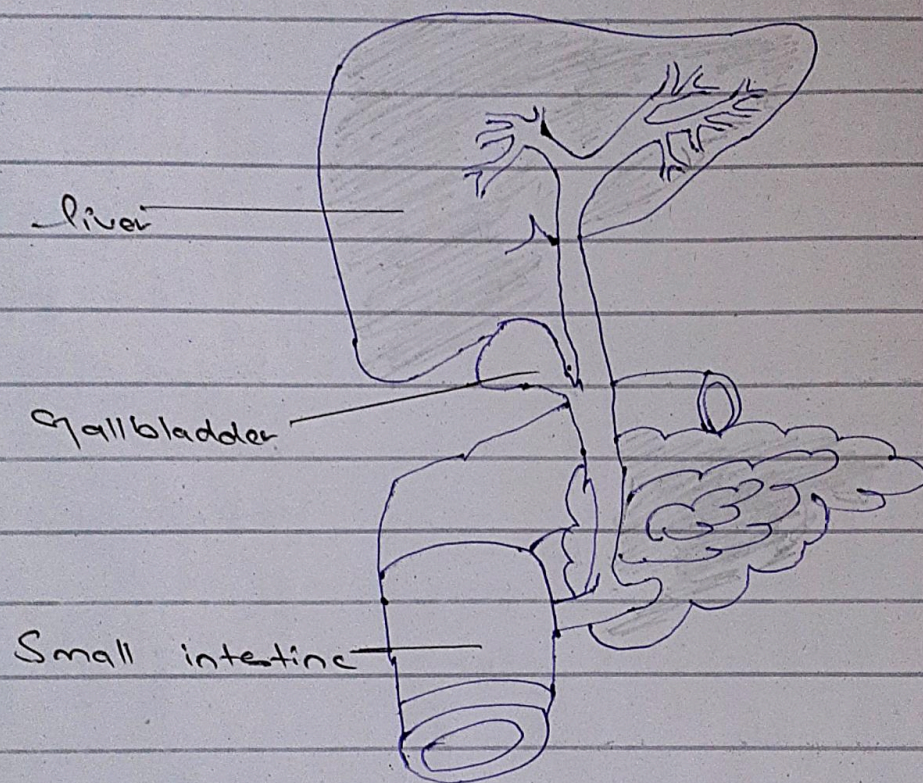
### Composition of Bile



### Role of Bile:

Bile aids in fat digestion and absorption. Whenever a fat rich food is consumed, the gallbladder releases bile into the small intestine through the bile ducts, which then helps in the breakdown of fats into smaller droplets, increasing their surface area allowing enzymes called lipases to efficiently breakdown the fats into fatty acids and glycerol.

Moreover, bile also helps in the elimination of waste products, such as bilirubin - a byproduct of red blood cell breakdown.



b Describe role of kidney in excretion.

**Kidney:** The kidneys are dark-red, slightly flattened, bean-shaped organs about 10cm long, 5 cm wide and 4cm thick and each weighing about 270g.

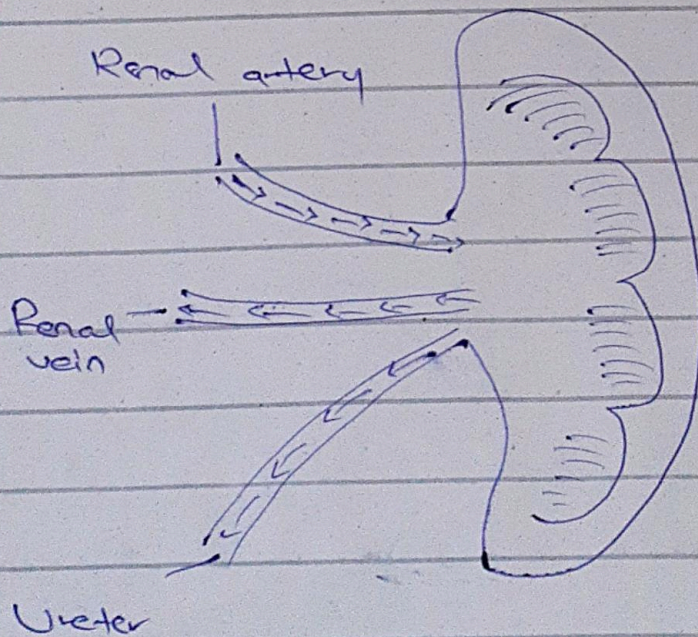
**Role of kidneys in excretion:**

kidneys remove waste and extra fluid from human body

They also remove acid that is produced by the cells of body and maintain a healthy balance of water, salts, and minerals - such as sodium, calcium, phosphorus, and potassium - in the blood.

Kidneys are the only means of eliminating the wastes that are the end products of protein metabolism.

Kidneys themselves do not modify the waste products that they excrete, but transfer them to the urine in the form in which they are produced in other parts of the body.



Discuss different methods of solid waste management.

Definition: Solid waste management (SWM) refers to the systematic management of the generation, collection, transfer, treatment, recycling, recovery, and disposal of solid waste.

d) Define the terms:

i) Anemia: Anaemia is a condition in which the number of red blood cells or the haemoglobin concentration within them is lower than normal. It occurs when there is not enough haemoglobin in the body to carry oxygen to the organs and tissues.

ii) Appendicitis: Appendicitis is an inflammation of the appendix. It causes pain in the lower right abdomen. However, in most people, pain begins around the belly button and then moves. As inflammation worsens, appendicitis pain typically increases and eventually becomes serious.

iii) Spleen: Spleen is a small organ inside left rib cage, just above the stomach. It is part of the lymphatic system. The spleen stores and filters blood and makes white blood cells that protect from infection. Many diseases and conditions can affect spleen working. A ruptured spleen can be fatal.

12 Myopia: Myopia (short-sightedness) is a common condition that is usually diagnosed before age 20. It affects the distant vision and they seem blurry. It happens when shape of certain part of eye cause light rays to bend or reflect. Light rays that should be focused on nerve tissues at the back of the eye, <sup>called retina</sup> are focused in front of the retina instead.

13 Isotones: Isotones are any of two or more species of atoms that have the same number of neutrons. The Chlorine - 37 and potassium - 39 are isotones because the species of chlorine consists of 17 protons and 20 neutrons, whereas the potassium specie contains 19 protons and 20 neutrons.