

Q39) Double Circulation: The heart has two sides from which the blood flows in & out twice per circuit. The right side of the heart pumps the deoxygenated blood from the body into the lungs and left side pumps oxygenated blood from the lungs into the body.

Blood flowing in a double circulation:

There are four chambers, two atria (upper chambers) and two ventricles (lower chambers).

The venae cava, the largest vein in the body, carries deoxygenated blood from the body into the right atrium, then blood goes into the right ventricle then it goes to lungs.

Now lungs oxygenate blood and take it into the left atrium. Then it moves blood to left ventricle into the body and aorta the largest artery of the body supplies blood to the whole body.

b Liver: "The liver the chief chemist of our body plays a significant role in detoxification in the human body".

Located: An organ located in the upper right quadrant of the abdomen, under the diaphragm.

Weight: Liver is 1.4kg and it is known as the heaviest organ of the body.

Chief Chemist of the human body:

Liver is a chemical factory which perform 500 chemical function in body. Liver takes certain materials in your body and turns them into something else for example, your liver turns protein & sugar into glucose.

Role of Liver:

1 Storage: Liver stores vitamin A, E, D, K and B-12 and iron that makes Red Blood Cells. It also stores sugar glucose and converts it to glucose if your blood sugar level drops.

2 **Detoxification system:** Liver removes toxic substances from blood such as alcohol and drugs. It also breaks down unhealthy cells, insulin, extra hormones to keep hormone level in balance.

"Liver performs, digestion, detoxification etc"

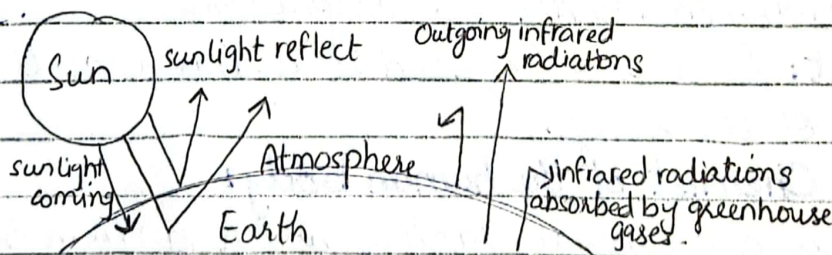
Liver Juice: Bile is a yellowish greenish digestive fluid produced by the liver & stored in the gallbladder.

c **Green House effect is a blessing:** No green house effect is not a blessing because it is increasing global warming day by day.

Greenhouse effect:

When sunlight reaches earth's surface, it can reflect back into space or either absorbed by earth. Some heat is absorbed and some is released into the atmosphere but greenhouse gases trap the sunheat. This process makes earth much warmer.

Without greenhouse gases heat would easily reflect back to space, leaving earth's temperature close to -20°C instead of 15°C . Once industries increases CO_2 then greenhouse effect is also increased & temperature also increases.



Effects of Global Warming: Following are the effects:

- i. Temperature increases so people leave hot areas & go to cold areas.
- ii. It rises sea level.
- iii. It also starts melting glacier because of hot.
- iv. Day by day floods are increasing because of melting of glaciers.

- v There will be water scarcity.
- vi Too much loss of biodiversity.
- vii Damage to agriculture & terrible storms.

d) @ Working of GPS:

"GPS stands for Global Positioning System."

The global positioning system is a navigation system that allows land, sea and airborne users to determine their exact location, time 24 hours a day in all weather conditions, from anywhere in the world.

Application of GPS:

It is a satellite based technology developed for and funded by the US Department of Defense.

(b) Working of Mobile Phone: Working of a cell phone consist 3 things.

1. **Radio Waves:** Radio waves are used to communicate on mobile phones. The electromagnetic field transport audio or data through radio waves. Radio waves convey data and travel at the speed of light across the air.

2. Antenna:

To receive radio signals, mobile phones include at least one radio antenna. An antenna converts an electric signal into a radio wave & vice versa.

3. Connectivity:

The connectivity between a mobile phone and nearest cell tower depends on both signals.

Q5(a) Radioactivity:

Radioactivity is the phenomenon in which unstable nuclei of certain elements emit electromagnetic radiations that are alpha, beta or gamma rays. In this process to attain a stable condition, measured in Curies or Rutherford the units of radioactivity.

Natural Radioactivity

Artificial Radioactivity:

1. Radioactivity that occurs on its own is called natural radioactivity.	Radioactivity that a man in laboratories induces, it is called artificial radioactivity.
2. The process is spontaneous.	It occurs due to external influence.
3. Natural radioactivity occurs only in those elements which possess unstable nuclei.	Artificial radioactivity occurs in stable nuclei.

(b) Polio:

Polio is a highly infectious viral disease, which mainly affects young children. It can cause paralysis in a matter of hours. But now it is decreased by 99% since 1988.

Symptoms:

Fever, fatigue, headache, vomiting, muscles pain and stiffness in back, neck, arms & legs. All these symptoms are mostly seen in children of age under 5.

Causes of Spreading:

People become infected with the virus through contaminated food & water especially in areas where sanitation and hygiene are poor. Polio virus enters the body through the mouth and proceeds through the digestive track to the intestines. When infected people do not wash hands & touch food or other people further

infections can spread. Adults can also get effected by changing diapers.

Prevention And Vaccine:

There is no cure for polio, it can only be prevented.

Vaccination of polio is the best way to prevent polio.

2 types of Vaccination:

1. Inactivated Polio Vaccine (IPV)
2. Oral Polio Vaccine (OPV)

1. **Inactivated Polio Vaccine:** It is given as an injection in the leg or arm.

2. **Oral Polio Vaccine:** It is taken by mouth.

(C) Solid Waste: Solid waste is the unwanted or useless solid materials produced from domestic, commercial, industrial & agricultural areas.

Solid Waste Management:

Solid Waste Management is a systematic management that collects, transfer, monitor, recycle, recovery and disposal of solid waste. Solid Waste Management reduces the solid waste impact on the environment & human health.

Issues in Solid Waste Management in Pakistan:

Following are the issues in Solid Waste Management in Pakistan.

1. Pakistan generates approximately 49.6 million tons of solid waste per year.
2. According to government approximately 59,000 tons of solid waste is coming from Karachi, Hyderabad, Lahore, Rawalpindi, Peshawar per day.
3. The amount of solid waste will be increasing with population growth.
4. Total 50% to 70% solid waste is generated and unfortunately there is no city in Pakistan with proper solid waste.

SECTION-II

Q8(b) In a mixture of 60 litres, the ratio of?

Solution:

$$\text{Quantity of milk} = \left(60 \times \frac{2}{3}\right) \text{ litres}$$

$$= 40 \text{ litres}$$

$$\text{Quantity of water} = 60 - 40 \text{ litres}$$

$$= 20 \text{ litres}$$

$$\text{New ratio} = 1 : 2$$

Let the quantity of water to be added further be x litres

$$\text{Then milk:water} = \left(\frac{40}{20+x}\right)$$

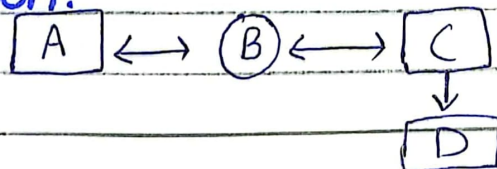
$$= \left(\frac{40}{20+x}\right) = \frac{1}{2}$$

$$= 20+x = 80$$

$$= x = 60$$

\therefore Quantity of water to be added = 60 litres

(c) **Solution:**



So D is nephew of A.

(d) URDU = XUGX

In the given code it is three-step forward for the first letter, three-step forward for the second letter, three-step forward for the third letter & three step forward for the fourth letter. Therefore the code for the word URDU is XUGX.