

Q_{No}:1 What is Circulatory System?
Describe the working of human heart?

(a)

Answer: Introduction

The Circulatory System is made up of the vessels and the muscles that help and control the flow of the blood around the body. The process is called Circulation. The main parts of the System are the heart and blood vessels.

Human Heart

Human heart is a fist sized, muscular organ that pumps blood through the body. Everyday, the heart pumps about 2,000 gallons (7,600 litres) of blood, beating about 100,000 times. The human heart has four Chambers. The upper two Chambers, the right and left atria, are receiving Chambers for blood. The atria are sometimes known as auricles. They collect blood that pours in from veins, blood vessels that return blood to

the heart. The heart's lower two chambers, the right and left ventricles, are powerful pumping chambers. The ventricles propel blood into arteries blood vessels that carry blood away from the heart.

A wall of tissue (septum) separates the right and left side of the heart. Each side pumps blood through a different circuit of blood vessels: the right side of the heart pumps oxygen-poor blood to the lungs, while the left side of the heart pumps oxygen-rich blood to the body.

- Four valves within the heart prevent blood from flowing backward in the heart. The valves open easily in the direction of blood flow, but when blood pushes against the valves in the opposite direction, the valves close.

Two valves known as atrio-ventricular valves, are located b/w the atria and ventricles.

- The right atrio-ventricular valve is formed of three flaps of tissue and is called the tricuspid valve.
- The left atrio-ventricular valve are located b/w the ~~ventricles~~ atrium and left ventricle is the mitral valve

also called bicuspid valve.

- The right Semi-lunar valve between the right ventricle and Pulmonary artery is also called Pulmonary valve.
- The left Semi lunar valve, between the left ventricle and aorta is also called the Aortic valve.

Q No: 1

(B) Explain Internal Structure of Earth?

Answer:

Introduction

The Structure of earth can be made up and defined in two ways: by mechanical properties such as rheology (response of rock to stress) or chemically.

- Mechanically it can divide into lithosphere, asthenosphere, mesospheric mantle, outer-core and inner core

Earth Crust;

The outer most layer of earth is the Crust. This comprises the continents and ocean basins. It is thin compare to the other layers. Made of Rocks and minerals

Two Types: Continent Crust forms

Continents, thicker

Ocean Crust forms ocean floor, thinner and denser.

Mantle,

The next layer is the

mantle which is composed mainly of Ferro magnesium Silicates. It is about 2900 km deep. It is the thickest layer of the earth. It is divided into upper mantle and lower mantle. Responsible for movement of tectonic plates.

Core;

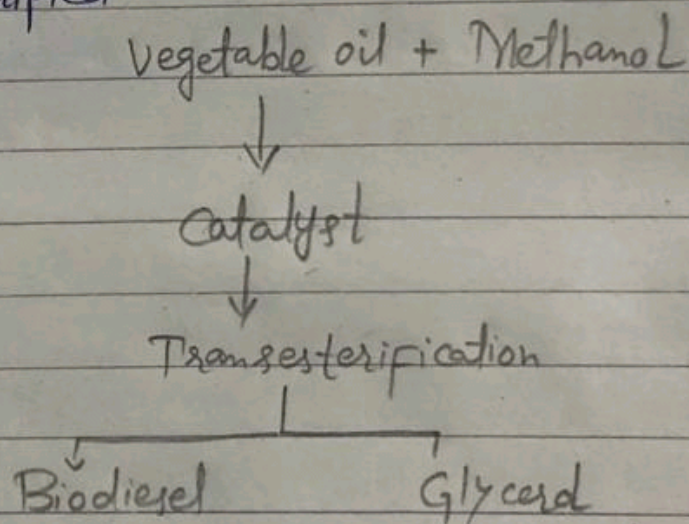
The inner most layer of the earth. The last layer is the Core, which is separated into liquid outer Core and the Solid inner Core. made up of mainly iron and nickel. It is divided into outer Core and inner Core the outer Core is liquid State and extremely hot. and inner Core is Solid State due to very high Pressure.

Q No 1

(C)

Answer: Production Of Bio-Diesel

- Biodiesel is produced from vegetable oils or animals fats by a chemical process called Transesterification.
- Vegetable oil is mixed with alcohol (methanol). A catalyst (NaOH/KOH) is added. The reaction produces bio diesel and glycerol. Bio-diesel is separated and purified.



Production Of Bio-Gas

- Biogas is produced from organic waste (cow dung, food waste) by anaerobic digestion.

Steps:

- waste is mixed with water to form Slurry
- Slurry is put into a biogas digester.
- In absence of oxygen, bacteria decompose the waste.
- Bio-gas (mainly methane) is collected
- left over Slurry is used as manure.

Q No 2
(d)

Answer: Earth Quake

- Earth quake can also occur due to volcanic eruptions, isostatic adjustments and some localised causes such as heavy drilling, nuclear experiments etc. Earth quake rarely take place at the surface of earth but at some depth within it. Through focal depths are usually shallow, earth- quakes have been detected as deep as 720 km.

Seismic waves;

There are two groups of earth quake waves called body waves and surface waves. Body waves travel from the earth quake focus in all directions whereas surface waves travel around the earth rather than through it.

- The earth crust is made of tectonic plates. These plates constantly moving. Stress build up along faults (cracks in

the earth's crust. when the stress
becoming to great, the rocks
suddenly break or slip. this release
energy in the form of seismic waves,
causing earth quake.

Q_{No: 3} what is Hepatitis

(A)
Answer:

Introduction

Hepatitis refers to an inflammatory condition of the liver. It's commonly caused by a viral infection, but there are other possible causes of hepatitis. These include autoimmune hepatitis and hepatitis that occurs as a secondary result of medications, drugs, toxins, and alcohol. Autoimmune hepatitis is a disease that occurs when the body makes antibodies against liver tissue.

Symptoms;

Initial symptoms of hepatitis caused by infection are similar to the flu and include

- Muscle and joint pain
- Feeling sick
- headache
- being sick
- Occasionally yellowing of eyes and skin
jaundice

Chronic Symptoms:

- depression , jaundice and a general sense of feeling unwell
feeling usually tired all the time.

Causes;

It is mainly caused by viruses, but other factors also caused it.

(1) Viral infection (Main Cause)

Hepatitis A Contaminated food & water

Hepatitis B infected Blood , unsafe injections
from mother to child

Hepatitis C : infected Blood, reuse of needles

Hepatitis D - Occur only with Hepatitis B infection

Hepatitis E - Contaminated water

- Poor Hygiene , unsafe medical practices
- Sharing Personal items

Preventions

(i) Vaccination : A and Hepatitis B vaccines
Vaccination is most preventive method

(2) Safe drinking water & food

(3) Personal Hygiene

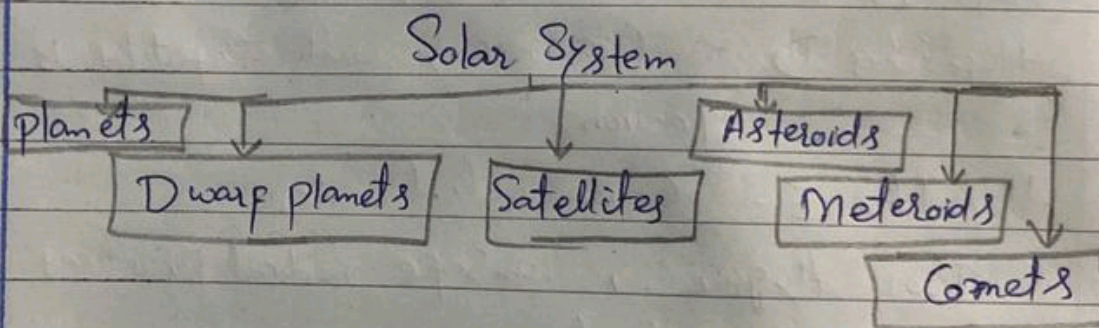
(4) Avoid Sharing Personal items.

(5) Health Awareness

Q No: 3
(B)

Answer: Solar System

Our Solar System consists of the Sun, Planets, dwarf planets, moons, an asteroid belt, Comets, meteors, and other objects. The Sun is the Center of the Solar System and all other objects in the Solar System orbit the Sun. Our Solar System is elliptical in shape.



Main Components of Solar System

Sun: A Star made of hot gases it contains most of the mass of the Solar System, Source of energy for life on earth.

Planets:

There are eight Planets that move

around the Sun in fixed path called
Orbits

3/ Moon (natural Satellite)

Planet have their own moon

Example Earth has one moon.

4/ Other Members :

- Asteroids rocky bodies b/w mars and jupiter

Comets : icy bodies with tails

Meteoroids Small rock particles

Q No: 3

(C)

Answer:

Gases Exchange In the Body

- Gases exchange in the body occurs by diffusion. In the lungs, oxygen from the air diffuses through the thin walls of the alveoli into the blood, while carbon dioxide diffuses from the blood into the alveoli and is exhaled. oxygen is transported by hemoglobin to body tissues, where it diffuses into cells. Carbon dioxide produced by cells diffuses back into the blood and is carried to the lungs for removal.

Q.No: 3

(D)

Answer: Solar And Lunar

Eclipse

An eclipse takes place when one heavenly body such as a moon or planet moves into the shadow of another heavenly body. There are two types of eclipses on earth an eclipse of moon and an eclipse of the Sun

Lunar Eclipse

The moon moves in an orbit around Earth and at the same time Earth orbits the Sun. Sometimes Earth moves between the Sun and the moon. When this happens Earth blocks the Sun light that normally is reflected by the moon.

- Three types of lunar Eclipse

- ✓ Penumbral lunar eclipse: the moon only passes through penumbra of earth's shadow. It is rarely visible on earth as there is slightly change of glow of the moon.

Partial lunar : when part of the moon passes through the umbra of earth's shadow then it is termed as partial lunar eclipse as its whole area is not obscured by the shadow.

• Total lunar eclipse : when the entire moon passes through the umbral region of earth's shadow and moon is totally obscured