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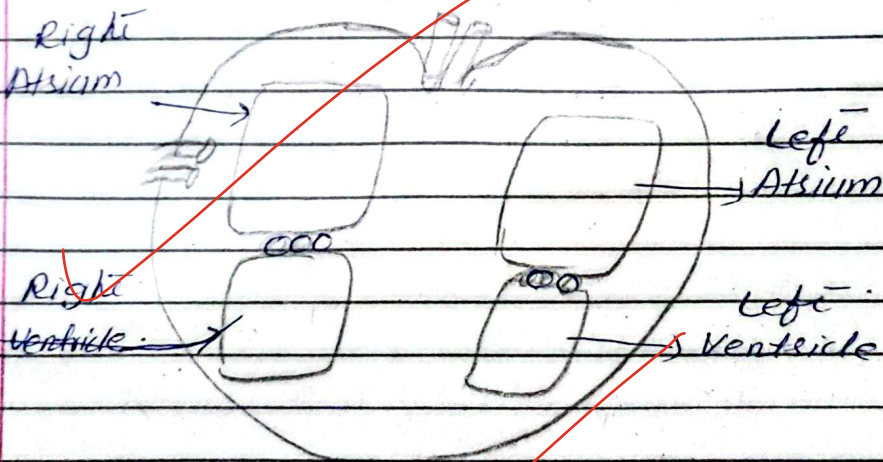
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Answer 1

a. Circulatory System

Circulatory system consists of veins, arteries, capillaries and heart through which blood flows from the heart to the body of organism.

Working of Human Heart



Chambers

Atrium, Left & Right
Left & Right ventricles

Deoxygenated blood is carried by veins and enters to the right atrium. Atrium gives this blood to the right ventricle through tricuspid valves. This de-oxygenated blood is carried

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pulmonary artery to lungs.
When it is oxygenated, it
is carried by pulmonary vein
to the left atrium. The
left atrium gives this to
the left ventricle. Ventricle
gives this oxygenated blood
to aorta - the largest artery.
Through this artery, oxygenated
blood is carried to all
part of the body.

b. The Internal Structure of the Earth.

It consists of three parts.

- A. Crust
- B. Mantle
- C. Core.

A. Crust

- ↳ Upper crust
- ↳ Lower crust.

Composition

crust is made of silicon
& iron

Mantle

Two parts.

- a. Asthenosphere
- b. Lithosphere.

This part is abundant in
silicon and aluminium

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a. Lithosphere is upper part of mantle. In this part, the Earth crust is divided into tectonic plates.

b. Asthenosphere is the lower part of mantle. In this molten form of rocks called flows.

3. Core

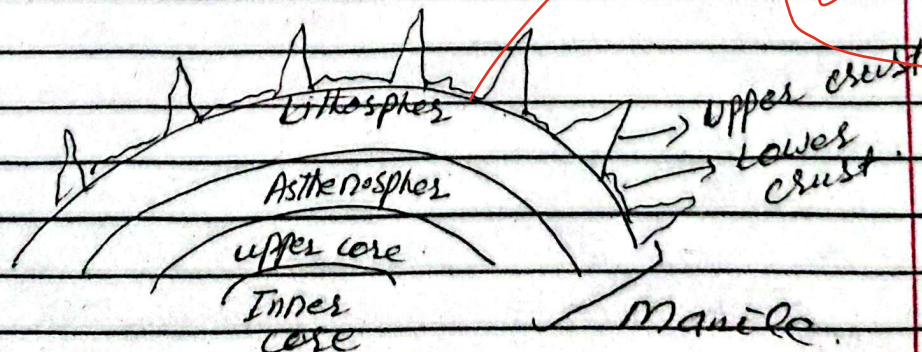
Two Parts

→ Inner core.

→ upper core.

Inner core is more hard than the upper core.

Core is made of nickel, aluminium and silicon.



④ Production of Bio-Diesel & Bio-Gas

Production of Bio-Diesel.

It is a fuel made from vegetable oils or animal fats.

Raw Materials

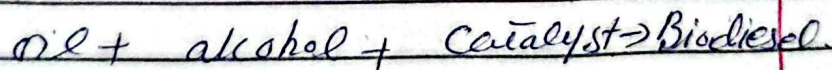
- Vegetable oil
- Animal fats
- Used cooking oil.

Production Process

Oil or fat is taken. It is mixed with alcohol.

A catalyst (sodium hydroxide) is added.

A chemical reaction called transesterification occurs and biodiesel is formed.



Production of Biogas

A gas fuel produced from organic waste.

Raw Materials

- Animal dung
- Food waste
- Crop waste
- Sewage.

Production Process

Organic waste is mixed with water.

2. The mixture is put into a biogas digester - air-tight tank.

3. Bacteria break down the waste without oxygen and biogas is produced.

4. Gas is collected and used for cooking or electricity.

d. Phenomenon of earthquake.

Earthquake

It is the sudden shaking of the earth surface due to the abrupt release of energy from the interior of the earth.

Causes of earthquake

1. Movement of Tectonic Plates

The earth crust is divided into tectonic plates. They constantly move in the earth crust. When pressure builds up that exceeds the force of crust, these plates slide, collide or move in opposite direction from each other. During their movement, energy is released that has been built up in the earth interior due to the molten rocks and gases. This results in earthquake.

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Volcanic eruption

Molten rock in the mantle called magma. This magma rises to the surface of the earth. It also includes gases. Gases exert pressure inside the earth. Therefore, this magma escape from the interior of the earth. When it comes out abruptly, earthquake is caused.

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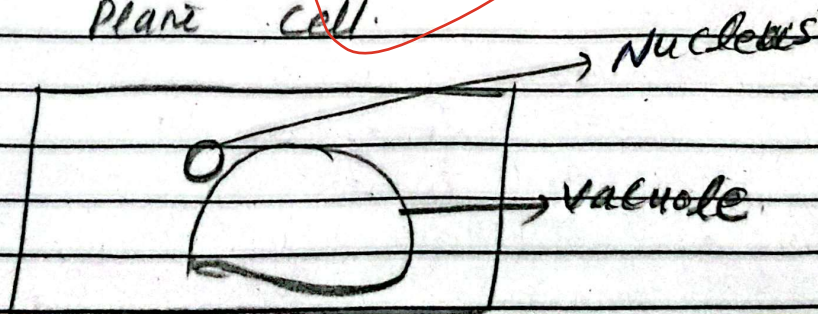
Human-Induced Earthquake

[mining and quarrying, nuclear explosion] These also cause earthquake.

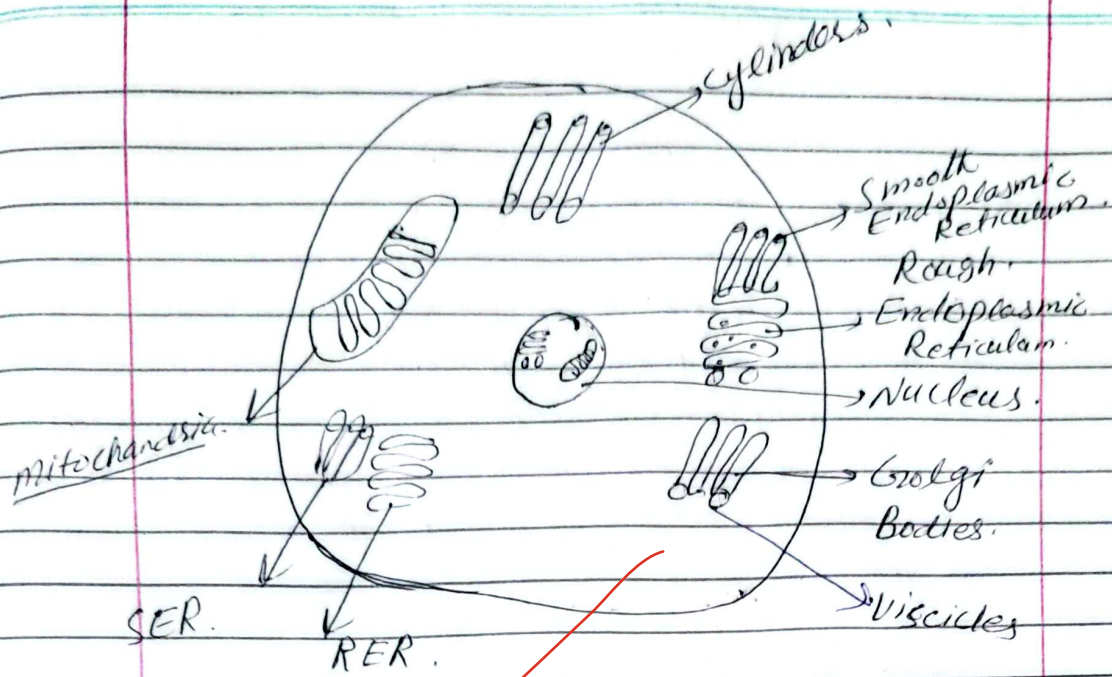
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Answers. 2

a. Differentiation between plant and animal cell.

Plant cell.



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Plant cell
One large
vacuole

Animal cell
many vacuoles.

cell wall

No cell wall

Mitochondria

Mitochondria.

nucleus

Nucleus.

Endoplasmic
Reticulum.

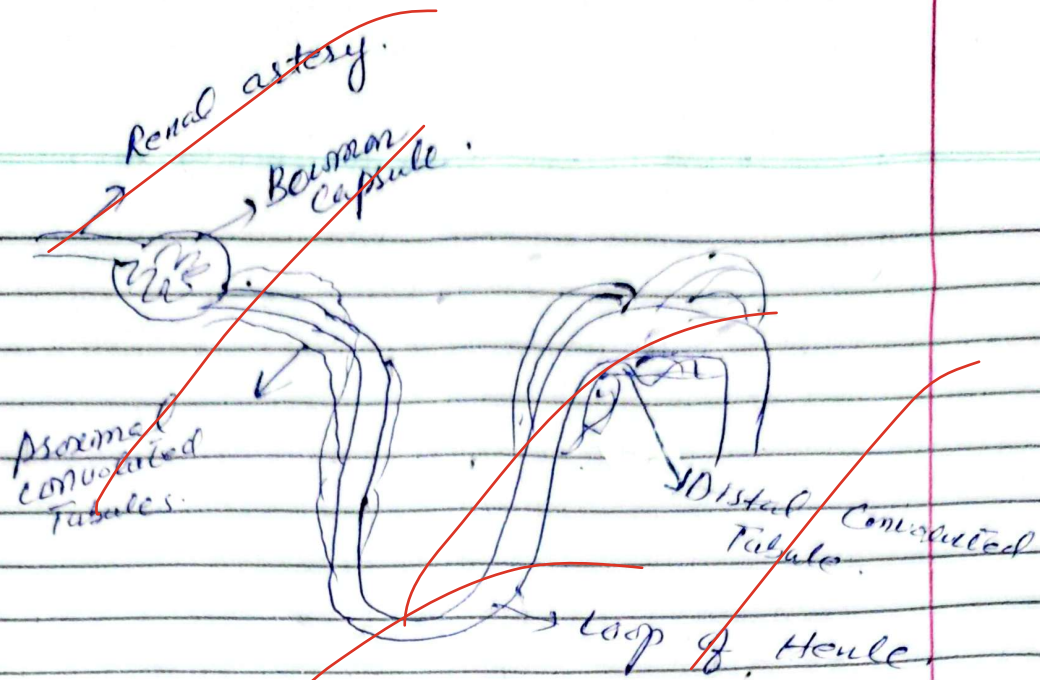
Endoplasmic
Reticulum.

b. Urine formation

Urine formation is taken
place in nephron of kidneys

It is formed through various
stages.

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→ Blood is carried by renal artery and ends in nephrons in Bowman capsule. In this blood is filtered by a network of tiny blood capillaries called glomerulus.

→ The filtrate now enters into the proximal convoluted tubule where about 80% H₂O and 100% glucose are filtered.

→ Now the filtrate enters into the loop of Henle where selective reabsorption takes place.

→ The filtrate then passes through distal convoluted tubule where further selective reabsorption takes place.

→ There is no reabsorption from the filtrate it moves to

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the collecting ducts. Then it is stored in urinary bladder in the form of urine.

d. Ceramics

Ceramics are inorganic substances formed from clay, feldspar and alumina.

Types

Households Ceramics

1. Earthenware

It is soft and porous formed from clay. Clay is fired at low temperature.

Application

Flower pots and households' decorative items are made of earthenware.

2. Stoneware

It is hard and the clay is fired at high temperature.

Application

Households pottery and jars, washrooms fittings are made of stoneware.

Porcelain

It is white and smooth

Application

China cups and plates are made of porcelain.

Application in Medical field.

- Screws and artificial teeth
- Artificial bones are made of ceramics.

Application in Industry

- Engine parts and furnace linings are made ceramics.

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