Date:

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LMS 3318

Q: 1 (a) Explain the working of human heart

Ans: **HUMAN HEART**

Human heart is the part of human circulatory system. It helps to pump blood around the body and supplies oxygen and nutrients to all parts of the body and ~~the~~ carries the waste and carbon dioxide through blood vessels away from the body.

Circulatory system of human body consists of

a- Heart

b- Blood

c- Blood vessels.

Structure of Human Heart:

Human heart is a sac like pumping organ. It enclosed in a double membrane called pericardial cavity. The muscles of heart called cardiac muscles.

There are four chambers of human heart. Two upper chambers called atria and lower chamber called ventricle.

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WORKING OF HUMAN HEART

a- The deoxygenated blood from the parts of the body comes into right atrium through two larger veins superior vena cava and inferior vena cava

b- The right ~~ventricle~~ atrium conducts blood to the right ventricle and it ~~conducts~~ pumps blood to the pulmonary artay

c- The pulmonary artay carries the blood into the lungs and picks fresh oxygen and eliminate Carbon dioxide

d- The oxygen rich blood passes from the lungs to the heart through the pulmonary veins. which empties into left atrium.

e- Blood passes from the left atrium into the left ventricle, from where it pumped into the aorta, the body's largest artery.

d- small arteries that branch off the aorta distributes blood to the whole body

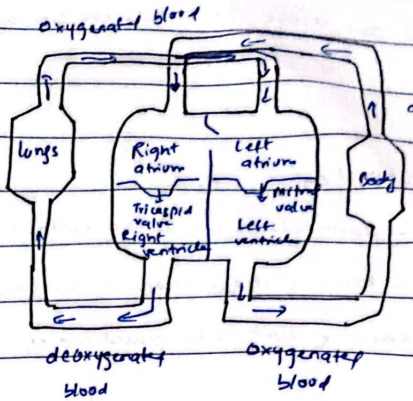
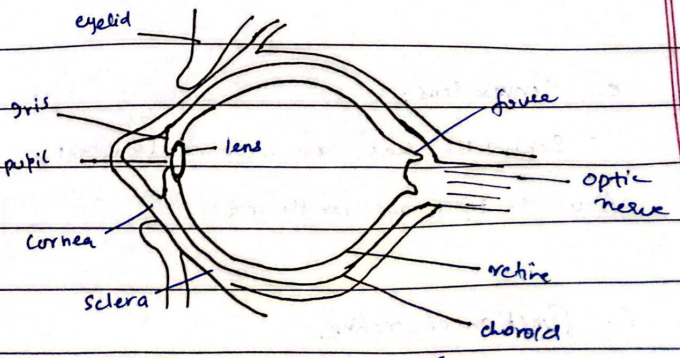


Diagram of circulatory system -
Working of Heart

Q: 1 (b)

HOW DO WE SEE?

Human see any object through the eye.



'Structure of eye'

a- Iris : Function

Colored part of eye. It controls the size of the pupil.

b- Pupil : Function

Pupil is dark circle inside the center of the eye. The dark hole is altered in shape by the iris as it controls the amount of light to be passed into eye

c- Function of cornea :

Cornea is important in focusing what the human beings see by bending light

d- Sclera

White part of the eye and it is protective and outer layer of the eye

e- Convex lens :

Behind the lens, there is convex lens that focus the light rays upon the retina

f. Function of retina :

Retina is innermost layer of the eye and contains photoreceptor cells. These photoreceptor nerve cells

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react to the presence of light and intensity of light and send impulse to the brain through the optic nerve. The part of retina sensitive and responsible for reading vision is called macula. This area is responsible for clear vision.

g- Function of optic nerve:

Optic nerve takes the information from the retina as electrical signals and deliver to the brain where this information is interpreted as a visual image

- The optic nerve contains bundle of one million nerve fibre

h- Rods and Cones in Retina:

Cones
Rods: Rods are responsible for percieving colour and detail

Rods: responsible for night vision and side vision

Rods and cones convert the light from the retines into electrical impulses which are sent by optic nerves to the brain, where image is produced.

(i) Macula:

The central part of retina is called macula that give central vision needed for activities like driving,

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reading and working on computers.

Q: 1 C

BIOFUEL

1 C A Definition:

Biofuel is a liquid, gas and solid fuels that are originated from biomass. Bio mass energy refers to the obtaining energy from burning wood, plants and organic matter.

1 C.B Bio Fuel : Importance

Biofuel has oxygen level of 10-45 pc making the chemical properties of biofuel different from other petroleum.

It has many importances due to their advantages

a- Bio fuels are less expensive than gasoline and other fossil fuels

b- Bio fuels are renewable source that is environmental friendly and less responsible for climate change

c- Bio fuel can be easily available. It is made from different sources like manure, waste from crop and plants that are readily available and is cost effective

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d- Bio-fuel emitts less Green House Gases than other biofuels.

1 C-C

Production of Biofuel:

a- First generation biofuels:

.. These types of biofuels are delived from ... sources like starch, sugar, animal fats and vegetable oil

b- Second generation biofuel:

These are derived from ligno cellulosic bio mass

c- Third generation biofuel:

It is desired from algal biomass

d- Fourth generation biofuel.

It is produced from bio conversion of living organisms using biotechnological tools.

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Q-D

DIFFERENCE BETWEEN ANIMAL CELL, PLANT CELL AND MICROORGANISM CELLS

	Animal Cells	Plants Cells	Microorganism cells.
1-	Cell wall is absent and cellulose is absent	cell wall is present that is made up of cellulose	It contains cell wall
2-	Cytoplasm is denser and occupies more space	Cytoplasm is pushed to periphery and form thin living against the cell wall.	Cytoplasm is gel like matrix composed of water, enzyme, nutrients and waste
3-	Small vacuoles are present that are responsible for excretion or secretion	The central space is occupied by the single large vacuole	The vacuoles are essential cytoplasmic organelles that are performing function of storage, digestion and excretion

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4- Nucleus is present at the centre.	Nucleus is present but not in the centre	microorganism generally lacks nucleus.
5- Plastids are absent	Plastids are present	plastids are absent

Q-2

A-

Increasing level of SO_2 and NO_2 are considered as threat because these are responsible for the production of Acid Rain

These gases when combine with the rain than are responsible for the production of acids that are responsible for the degradation of biological lives on earth

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Q:2 c

Remote sensing

Remote sensing is the science and technology by which characteristics of interest can be identified without direct contact through ground based, airborne or space borne sensors using parts of electromagnetic spectrum

Importance of Remote sensing in Environmental Science:

a- Remote sensing is used in conventional military radars

b- Remote sensing is used in observing a broad area at a time

c- To know the condition and environment without direct contact

d- 3D imagery for examination of topography, forest, crops, land coverage, water quality

e- Monitory and conservation of resources, it is used