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Q2

(A) WATER POLLUTION; TYPES; MEASURES

(I) Definition:

Water pollution refers to the contamination of clean water by the addition or mixture of pollutants, such as waste products — man made and industrial, toxins or chemicals.

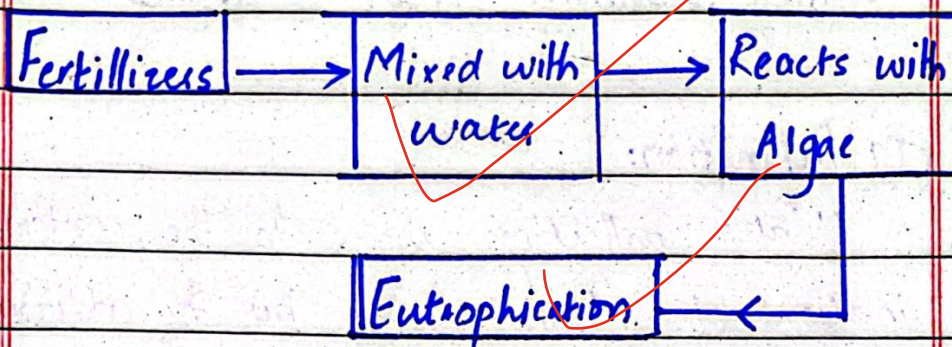
(II) Types of water pollution:

(A) Source-specific:

In this type, water is contaminated directly at the source. It is done by the addition of harmful chemicals, waste or toxins, which pollute the water and therefore makes it unsafe from the get-go.

(B) Indirect Pollution:

In this case water is mixed with contaminants which are not harmful on their own but when reacted with the water eco-system, creates harmful effects.



(III) Mitigation measures

(A) Filtration of water:

Contaminated water must be first filtered before ^{being} released into the environment.

(B) Controlled release:

Water used in industrial or commercial ventures must be released incrementally, not exceeding acceptable safe-levels.

(C) Strict monitoring and regulation:

Environmental protection agencies must ensure active water monitoring, and subsequently implementing strict fines in case of violation.

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(B) Cell

(I) Definition:

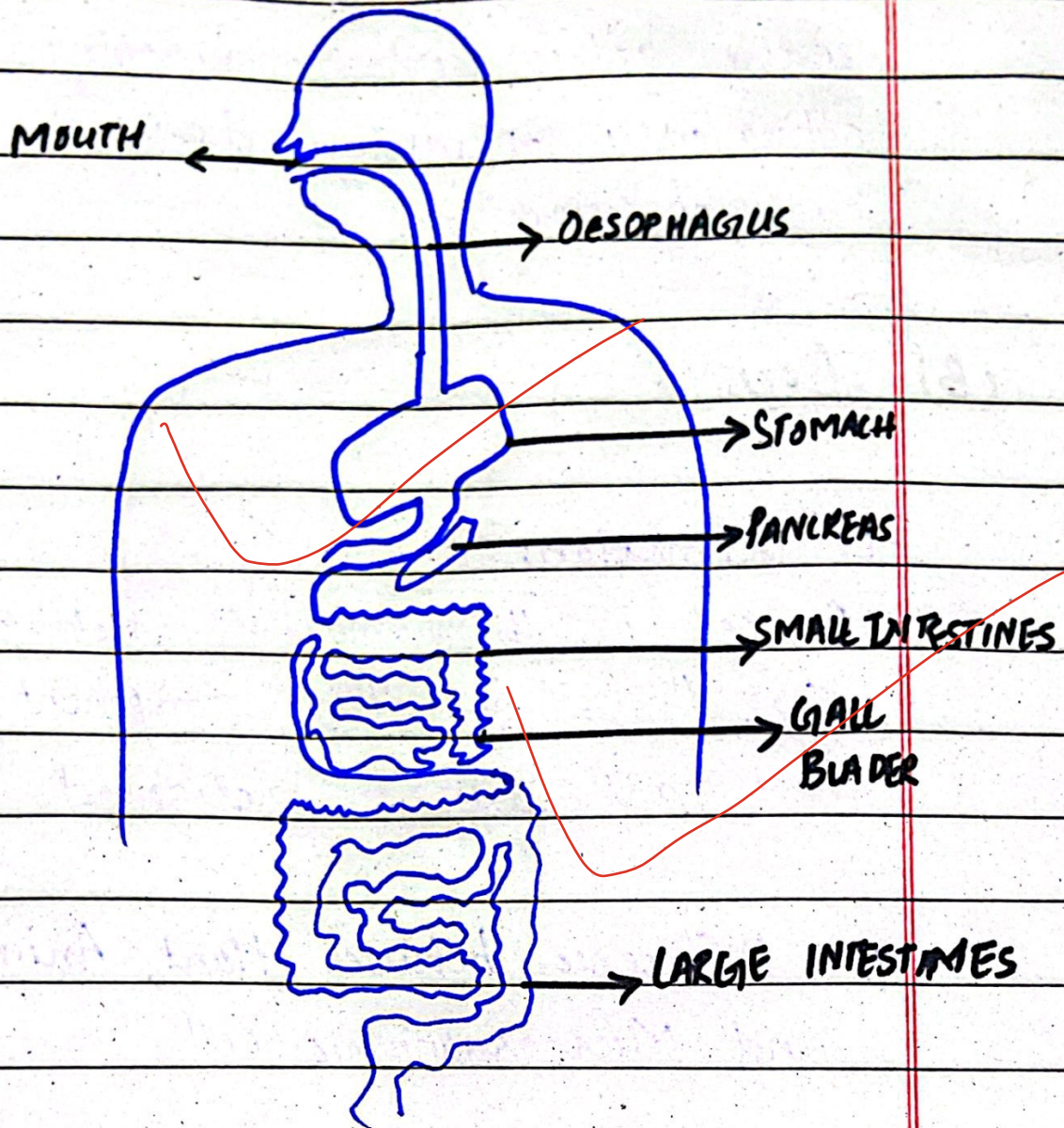
A cell is the smallest unit of life. It is the basic component upon which all life is predicated.

(II) Difference between Plant, Animal, and Microorganismic cell

ANIMAL	PLANT	MICROORGANISMIC
No cell wall	Cell wall	Cell wall
Eukaryotic type	Eukaryotic type	Prokaryotic type
Complex	Complex	Simple
Organelles	Organelles	No organelles
No flagella	No Flagella	Flagella
Small vacuole	Large vacuole	no vacuole

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(C) FOOD DIGESTION



1. Mouth:

Food is broken down into small chunks in the process known as mastication. Some molecules start, like carbohydrates, start to break down here.

2. Esophagus:

Food ; through the process of peristalsis

goes from the ~~and~~ oesophagus into the stomach.

3. Stomach:

Here the most of the digestion happens. As the food bolus enters, it reacts with strong HCl and enzymes. Consequently, the macromolecules are broken into small absorbable molecules.

4. Small intestines:

The food then enters into the small intestines, where the small ~~ab~~ molecules are absorbed by the walls of the intestine.

5. Large intestine:

This is the last stage, whereby the large intestine absorbs the water and minerals.

6. Excretion:

The remaining waste is then discarded.

(D) GIS

GIS refers to the geographic imaging system. It entails the use of satellites to present a picture of the land surface of the Earth.

(I) Environmental applications

(A) Analysis of land surface:

GIS can be used to analyse the various surfaces of the Earth. It can accurately present information about the different terrains.

(B) Inundation of floods and water

GIS can be utilised to accurately determine the rise of water level on the surface, and the inundation by coastal or riverine floods.

(C) Monitor plants and animals:

GIS can be used to check the eco-system of an environment. It can

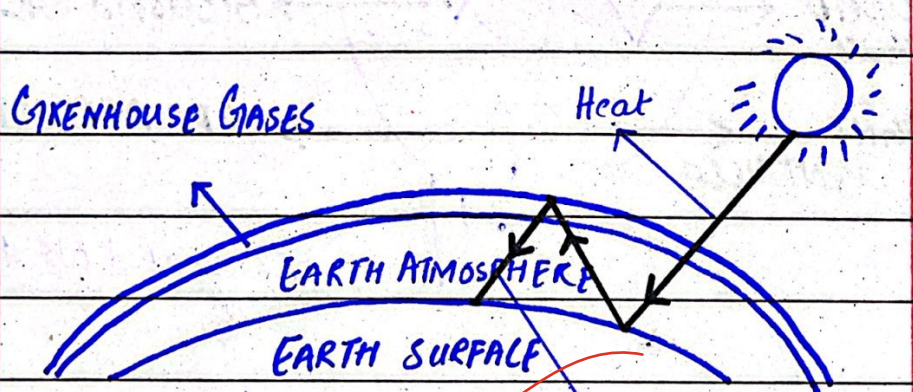
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determine which plants and animals reside where.

Q3

(A) ENHANCED GHE ; GLOBAL WARMING

GHE is an acronym for greenhouse emissions, which are now rapidly pumped into the atmosphere. They start due to the heightened anthropogenic activity, as to a result of industrialization, green house gases are released into the atmosphere at an unprecedented rate.



Due to the added layer - as a result of greenhouse gases like CO_2 - heat from the sun

TRAPPED HEAT

GLOBAL WARMING

cannot escape, making the Earth akin to a

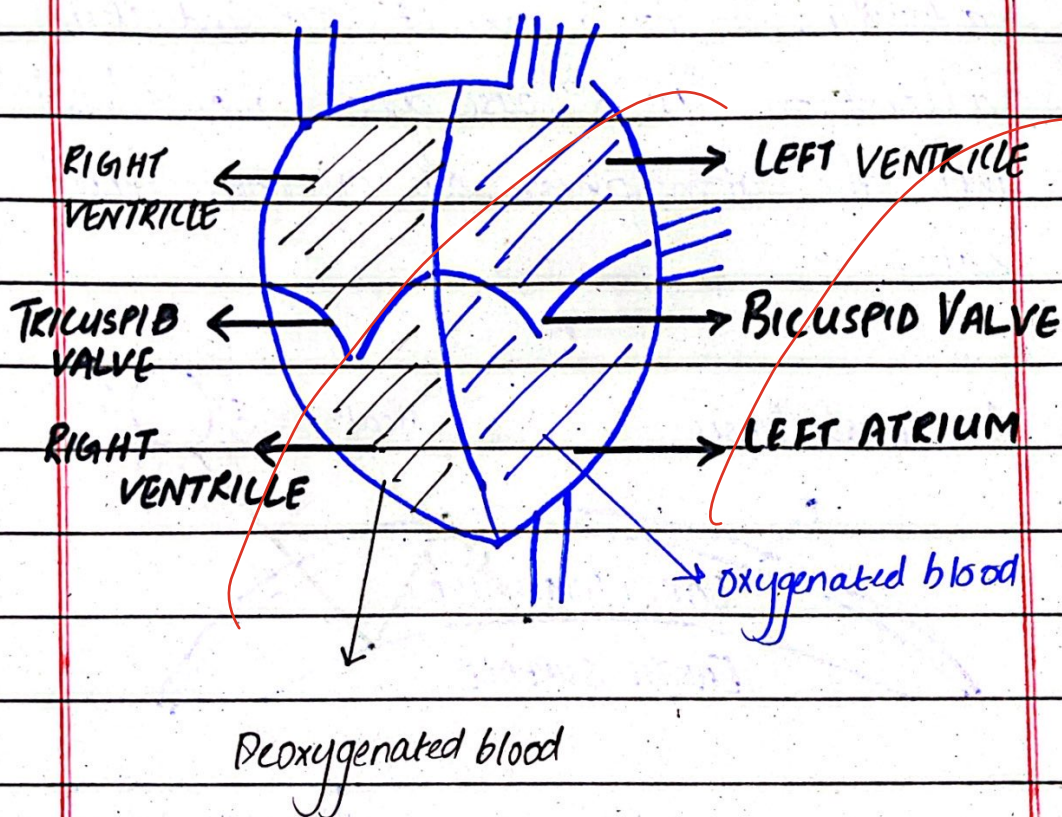
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greenhouse. Owing to this perpetual entrapment, the Earth begins to warm-up.

(B) ROLE OF HEART

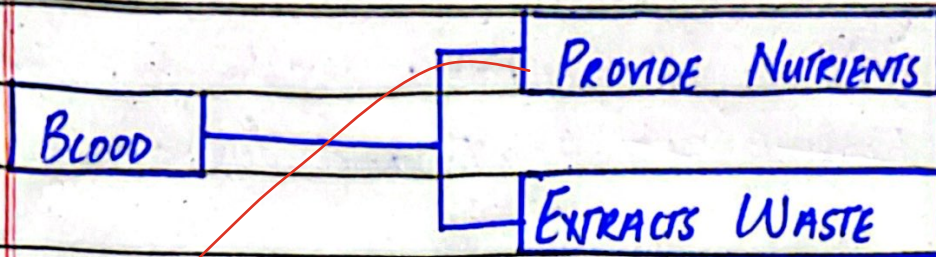
The heart is a muscle organ whose job is to pump blood.

(I) Function of the heart



1. Pumps blood:

The primary task of the heart is to pump blood to the body.



Blood provides nutrients and extracts waste from the cells, which is then distributed by the heart to the relevant organs.

2. Receive and distribute Oxygen:

Oxygen is the core component required by a cell. The heart receives oxygenated blood from the lungs and distributes it to the required organs.

3. Receive and excrete CO_2 :

Carbon dioxide is the waste produced by cells. The heart receives CO_2 and distributes it to the relevant organ - lungs - to be exhaled from the body.

(4) WASTE DISPOSAL TECHNIQUES

Waste disposal techniques are controlled

methods of disposing waste to protect human and health and environment.

A. LANDFILL METHOD

Low cost but
risks leachate
and methane

Waste deposited in
engineered pits

Covered and layered
with soil

B.

INCINERATION

Creates toxic
emissions

High-temperature burning of waste

Reduces volume upto
90%.

Can generate
energy

C.

RECYCLING

Lengthy, time-consuming,
cost-depreciating

Repurposing trash
to serve new needs

Saves energy and
resources

D.

COMPOSTING

Time-consuming,
needs proper
conditions

Biological breakdown
of waste

Natural and organic

Produces nutrient-
rich compost

E.

WASTE-TO-ENERGY

Cost-intensive

Reduces landfill
pressure

Converts waste into
heat, fuel, or electricity

(D) STRUCTURE & WORKING OF HUMAN EYE

