

1. Environment & Climate Change

Defination :

Environment :

It is defined as physical, chemical & biological world surrounded us known as Environment.

Ex: humanbeings, plants, water etc.

Components of Environment:

There are two Component in Environment

a) biotic

b) Abiotic

1) Biotic Component

Includes all living organisms

ex: plants, animals, microorganisms etc.

2) Abiotic Component

Includes all Non-living organisms

ex: air, water, soil, sunlight, temperature etc.

Types of Environment

There are 4 types of environment.

a) Natural Environment

b) Man-made Environment

c) Social Environment

d) Psychological Environment.

1] Natural Environment

The things which are obtained from the nature called Natural Environment

Ex: Forests, rivers, mountains, oceans, air, Rock
Sunlight, H₂O, ecosystem etc.

2] Manmade Environment

The Environment which is modified by human being known as manmade Environment.

Ex: Urban areas, industries, roads, building network and other infrastructures created by humans.

3] Social Environment

It includes social, Economical & Political conditions

ex: Communities, Social Structures, language, profession, culture etc.

4] Psychological Environment.

Every person has different personality. The psychological environment refers to the mental & emotional atmosphere that individuals or groups experience

Ex: thoughts, behaviours, feelings, societal expectations, & individual perceptions.

• Needs for Environmental Studies :

1] Awareness of Environmental Problems :

Helps to understand issues like pollution & resource depletion

2] Sustainable Development :

Ensure a balance between economic growth & environmental conservation

3] Preservation of Biodiversity :

protects the variety of life on Earth.

4] Mitigating Climate Change :

Promotes actions to reduce global warming & its impacts

5] Conserve Energy

6] preservation of Natural Resources

7] create New ideas to protect environment

• Segments of Environment

There are four segments of environment.

- 1] Atmosphere
- 2] Hydrosphere
- 3] Lithosphere
- 4] Biosphere

1] Atmosphere :

The study of air surrounded our planet it is known as atmosphere

The gases are N_2 , H_2O , Ar, O_2 , CF_2Cl_2

$N_2O \rightarrow 78\%$

Ar $\rightarrow 0.6\%$

$O_2 \rightarrow 21\%$

2] Hydrosphere

The study of water surrounded our planet it is known as Hydrosphere

Water, River, Lake, Oceans, Sea, Ponds

$H_2O \rightarrow 71\%$

land $\rightarrow 29\%$

Water in Sea $\rightarrow 97\%$

Drinking water $\rightarrow 2 \frac{1}{2}\%$

3] Lithosphere / Geosphere

The study of rock or solid part of the earth surrounded our planet called Lithosphere

which contain minerals & organic matter.

4] Biosphere

The study of all living organisms surrounded to our planet known as Biosphere.

Ex: Plants, Animals, Humanbeings.

All four sphere are interlink with each other & depend on each other.

⇒ Environmental issues

- 1] Green house effect
- 2] Global warming
- 3] climate change
- 4] ozone depletion
- 5] Acid rain.

1) Green house effect

It is the natural process in which the atmospheric gases like CO_2 , CH_4 , CF_2Cl_2 & N_2O which are hold the energy of the radiations is reflected by the sun mix with & release on the earth known as green house effect.

$\text{CO}_2 \rightarrow 60\%$

$\text{CF}_2\text{Cl}_2 \rightarrow 14\%$

$\text{CH}_4 \rightarrow 20\%$

$\text{N}_2\text{O} \rightarrow 6\%$

• Properties of green house effect.

- ① The large quantity of CO_2 , N_2O (laughing gas) due to the combustions of fossil fuel industries & automobiles.
- ② Methan (CH_4) gas which is present lower layer of the earth & it decompose organic matter.
- ③ Chlorofluorocarbon [CF_2Cl_2] the cooling industries are create gas CFCs & which is present lower layer of the earth effect on the green house affect & also present higher level of the earth which is affect a ozon layer & cause problem that is ozon depletion.

2] Global Warming

It is the rising the temperature of the earth
Due to green house gases CH_4 , N_2O , CFCs,
 CO_2 cause global warming

Effect or Causes of Global Warming

- Rising the temperature on the earth.
- deforestation
- Glacier melt
- Increase the level of ocean
- Effect the Human Health

3] Climate change

- Climate it is a average of whether at a
point and long time period that is 30
years

- Whether it is change in day to day
life and climate remain constant
- If climate doesn't remain constant
this is known as climate change.

Effect

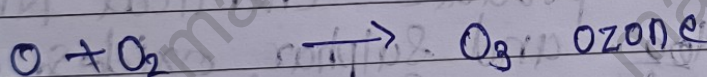
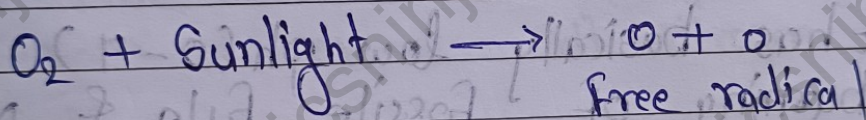
- affect on Ecosystem.
- Negative impact on production
- Change in season
- Negative impact on transportation

- Emission of green house gases
- affect on Human health.

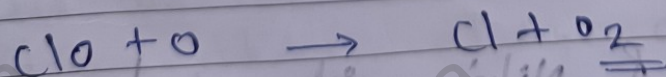
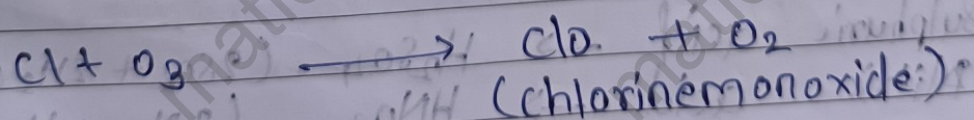
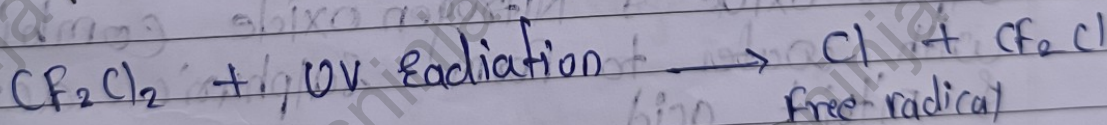
4] ozone depletion

ozone layer is present above of the earth 10 to 50 km in the stratosphere. It is protect from UV radiation from the sun on the earth

Formation of ozone



Depletion of ozone



Effect or causes of ozone depletion

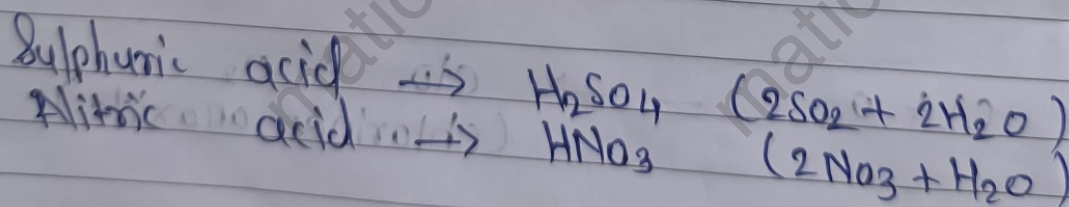
- Skin Cancer
- Formation of photochemical smoke it reduce plant.
- Decrease the population of region
- Air pollution
- Human System

5] Acid Rain

Acid it has basically low pH (0-7)

The burning of fossil fuel & Natural gases which produce chemical Nitrogen oxide NO_x and Sulphur oxide SO_2 and other Nitrate & Sulphate.

Sulphur oxide & Nitrogen oxide combine with water to form Sulphuric acid & nitric acid



Sulphuric acid & Nitric acid which combine with water vapor fall on the ground & cause acid rain.

Effects

- human health
- aquatic life
- effect on plants & animals

MCQ

1. HNO_3 is the formula of ---

- ☒ a) Nitric acid ☐ b) Sulphuric acid
☐ c) None of these ☐ d) Nitrogen oxide

2. PH of acid is ---

- ☒ a) 7 ☐ b) 0-7 ☐ c) 7-14 ☐ d) None

3. effects of Climate change ---

- ☐ a) effect on Ecosystem
☐ b) change in season
☐ c) Emission of green house gas
☒ d) All of the above

4. Formula of ozone

- ☐ a) O_2 ☒ b) O_3 ☐ c) O_4 ☐ d) None

5. Formula of Chlorofluorocarbon.

- ☒ a) CF_2Cl_2 ☐ b) CFCl_3 ☐ c) CF_3Cl_2 ☐ d) None

6] Nuclear Accidents.

When the formation of Nuclear Fission & Nuclear Fusion. In which release of Energy that is known as Nuclear energy which is mixed with Radio active substances [Medical equipment, UV ray, Ceramic, Cosmetics] Cause Nuclear accident

Effect

The exposure of Low radiation that is 100 to 500 it is cause omitting & hair lose.

The exposure of high radiation that is 400 to 500 it is Cause blood cells & blood coagulation.

The exposure of Very high radiation that is 10,000 causes death of human being affect on aquatic life.

It is break chemical bond in DNA.

• Concept of 5R

- 1] Reduce / Refuse
- 2] Reuse
- 3] Recycle
- 4] Repurpose
- 5] Recover.

1] Reduce / Refuse.

Avoid making garbage-garbage than do not worry about to decompose waste.

Changing the habit working, shopping and use Natural Resources

Good Care of things avoid artificial resources

2] Reuse

Use the resources again & again if they are not destroy.

Newspaper for packing food, plastic for making new things, waste garbage used for plantation

3] Recycle

Generate new object form waste material.

Ex:

plastic, newspaper, thermacol, Electronic equipment

4] Repurpose

The object is used another purpose when original purpose it get finished.

if one object is used one purpose only than without throw out think about another uses.

Ex:

plastic, wood, glass

5] Recover

if the stock of Reuse, Reduce, and Recycle of the object than use concept of Recover.

Ex: automobile electronic equipment, machine.

• Benefits of ER

Reduce Cost

Save time

Save energy

Save natural resources.

MCS's

1) How many types of component in the environment

☐ 1

☒ 2

☐ 3

☐ 4

2) Includes all non-living organisms is called

☐ a) Biotic

☒ b) Abiotic

☐ c) Both a & b

☐ d) None

3) How many types of Environment?

☒ a) 4

☐ b) 3

☐ c) 2

☐ d) 5

4) The things which are obtained from nature is called _____ Environment.

☐ a) Social

☐ b) Man-made

☒ c) Natural

☐ d) Psychological

5) Industries, road, building are example of which type of Environment

☒ a) Man-made

☐ b) Natural

☐ c) Social

6) Preservation of natural resources is need of the Environment true / false?

True