

* Define Environment and explain various Components of Environment.

Environment is defined as sum total of all conditions that surround a particular organism at a particular point of time in space.

Components :-

1 Lithosphere : It is derived from the word sphere, combined with greek word "lithos" meaning rock. It is the solid outer section of earth which includes crust, as well as underlying cool, dense and rigid upper part of upper mantle. The lithosphere extends from the surface of earth to depth of about 70-100 km.

2 Hydrosphere : Hydrosphere comprises of all forms of water bodies on earth including marine, fresh-water and underground water resources. It covers 71% of earth's surface. 97% of water found on earth is in oceans in form of salt water. Only 3% of water on earth is freshwater out of this 30.8% is available as ground water and 68.9% is in frozen forms as in glaciers.

3 Atmosphere : Atmosphere is gaseous layer enveloping the earth. The atmosphere with oxygen is unique to earth and sustains life. It mainly comprises 78.8% nitrogen, 20.95% oxygen, 0.93% argon, 0.039% carbon dioxide and traces of

hydrogen, helium and noble gases. The amount of water vapour is variable. earth's atmosphere has a series of layers, each with its own specific traits. These are named as troposphere, stratosphere, mesosphere, thermosphere and exosphere.

4 Biosphere : Biosphere refers to all the regions on earth where life exists. The ecosystem that supports life could be in soil, air, water or land. Biosphere refers to sum of total of all living matter the biomass. It extends from the polar ice caps to the equator with each region harbouring some life form suitable to the conditions there.

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* Write a short note on Scope of Environment studies.

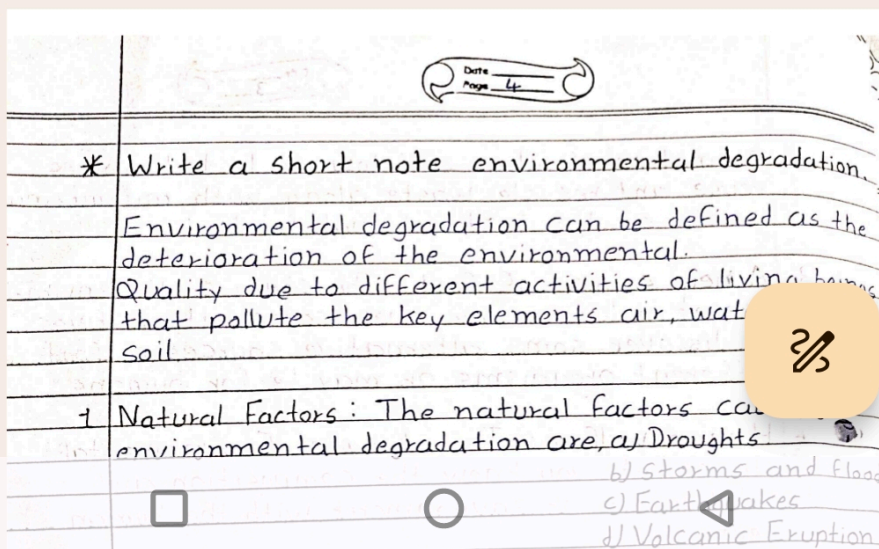
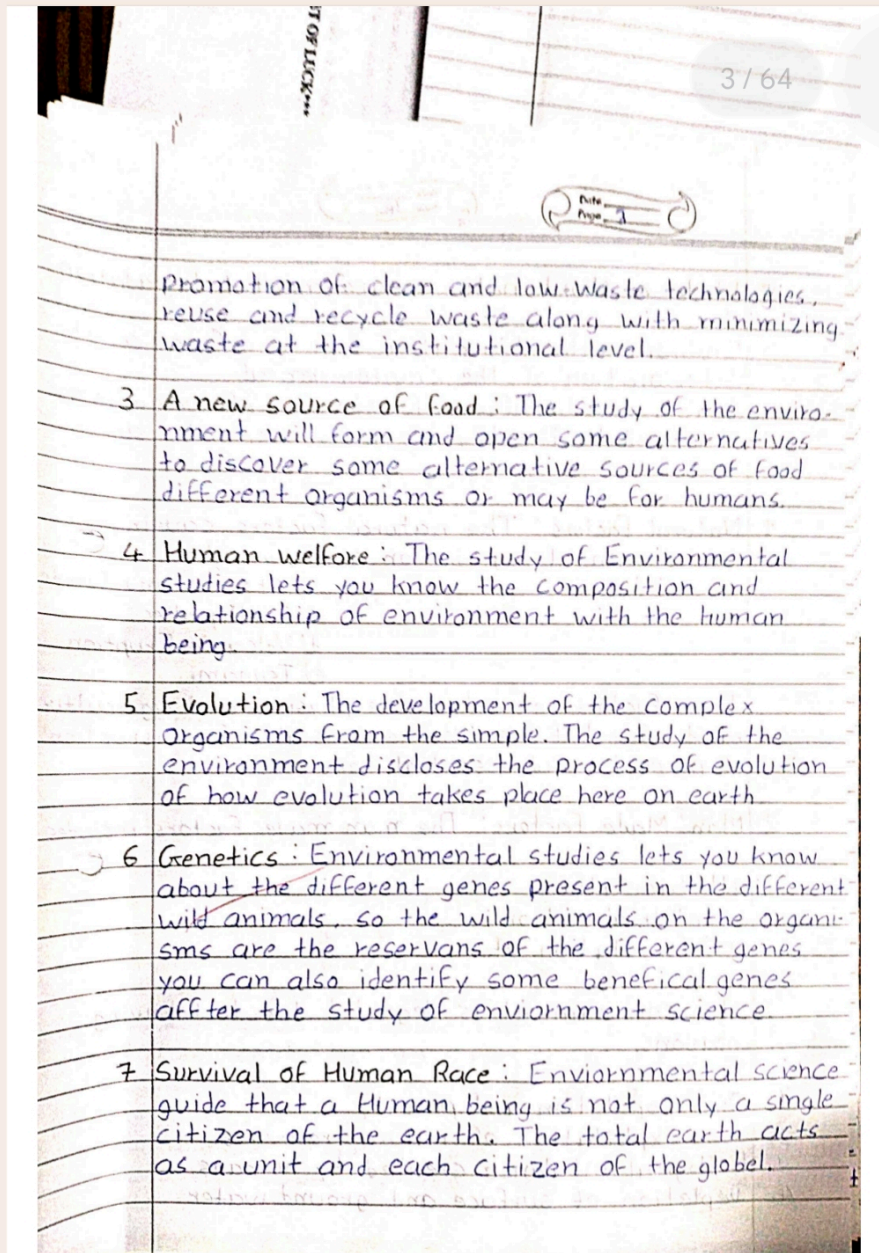
By studying environmental studies, we will come across with some solutions to the problems of how to

1. Maintain natural resources: The natural resources are not unlimited. For example water with the growth of some organisms natural resource is in high demand, but it can be managed by applying studies of environmental damage.

2. Controlling Pollution: With the increasing activities of every organism present the environment is getting polluted. One way to emphasize the

promotion of clean and low-waste technologies, reuse and recycle waste along with minimizing waste at the institutional level.

3. A new source of food: The study of the environment will form and open some alternatives to discover some alternative sources of food.



you can also identify some beneficial genes after the study of environment science.

7 Survival of Human Race: Environmental science guide that a Human being is not only a single citizen of the earth. The total earth acts as a unit and each citizen of the globe.

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* Write a short note environmental degradation.

Environmental degradation can be defined as the deterioration of the environmental quality due to different activities of living beings that pollute the key elements air, water and soil.

1 Natural Factors: The natural factors causing environmental degradation are,
a) Droughts
b) Storms and floods
c) Earthquakes
d) Volcanic Eruption
e) Tsunami

These factors not only cause physical and agricultural damage but are also responsible for disruption of property and essential services.

2 Man-Made Factors: The man made factors include
a) Urbanisation
b) Industrialization
c) Deforestation etc.

The environment is degraded due to following reasons.

1. Over population and poverty
2. Over exploitation of natural resources
3. Ecological imbalance created by humans
4. Depletion of surface and ground water

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5. Destruction of wild life habitats
6. Huge deforestation
7. Wide use of fossil fuels like Coal
8. Heavy industrialization leading to pollution
9. Use of fertilizers and pesticides
10. Soil erosion

The Impact equation - IPAT
 $I = PAT$ where,

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The Impact equation - IPAT

 $I = PAT$ where,

I = Environmental Impact

P = Population of Humans

A = Affluence - refers to level of Consumption

T = Technology - refers to processes used to obtain resources and transform them into useful goods.

* Write a short note on impact of man on environment

1. Population: Human Overpopulation has been affecting the environment for hundreds of years and is a concern. Accommodating population growth has been a root cause for much of the impact on the environment. The effects the overpopulation are severe, with one of the most severe being the degradation of the environment.

2. Pollution: Pollution is the introduction of substances that cause adverse changes in the environment.

and living beings. There are different types of pollution.

a. Air Pollution: which is caused by human activities such as burning fossil fuel, mining operations.

b. Water Pollution: Caused by activities such as dumping solid wastes in water, human and industrial wastes.

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- a. **Air Pollution:** which is caused by human activities such as burning fossil fuel, mining operations.
- b. **Water Pollution:** Caused by activities such as dumping solid wastes in water, human and industrial wastes.
- c. **Noise Pollution:** Caused by activities like construction, household noises from TV, speakers etc. noises from vehicles and industry oriented noises.
3. **Global warming:** Global warming is the greatest cause of impact on the environment. The largest of causes are due to CO_2 levels from respiration to burning fossil fuels and deforestation. Human are consistently increasing CO_2 levels globally. As the temperature increases, glaciers start melting which causes the ocean levels to rise.
4. **Deforestation:** With increases in numbers of human beings more food, materials and shelter are being manufactured at very high rates. With trees being one of the largest producers of oxygen, clearly deforestation is not a good thing for humans. Deforestation also increases

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green house gases in the atmosphere which further leads to global warming.

5. **Ozon depletion:** Ozon layer is renowned for its ability to absorb harmful UV radiations of the sun. CFC emissions from devices such as AC and refrigerators are responsible for the depletion. UV rays are harmful for humans and if gets in contact with humans can cause eye and skin diseases such as a skin cancer.

* Explain the need of sustainable development.

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* Explain the need of sustainable development.

Sustainable development is referred to as the idea that human beings should sustain by meeting their basic needs while also making sure that the future generations are able to meet their basic needs.

In other words it is a way of organising the society by which it can exist for a long duration without compromising the availability of resources for future generation.

• Objectives

- 1 Economic growth for creating an economy that is sustainable and grows in right direction.
- 2 Protecting the environment this focuses on

Contribution by humans towards protecting and enhancing natural environment by minimising pollutant and waste.

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Contribution by humans towards protecting and enhancing natural environment by minimising pollutant and waste.

• Importance:

1 To prevent degradation of the environment and laying emphasis on protecting the environment.

2 To prevent Over exploitation of resources.

• Need of Sustainable Development.

-> From the last two or three decades we have seen that the sake of economic growth has taken a toll as a result.

-> Using the available resources judiciously and working towards maintaining the ecological balance.

-> We must also ensure that we do not compromise the needs of future by Over.

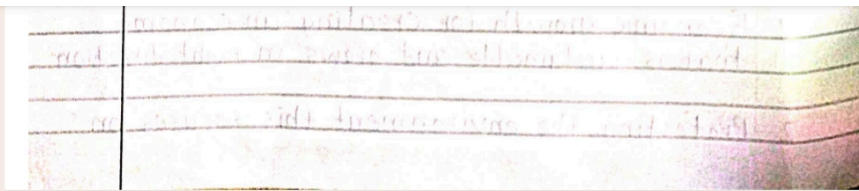
-> All these factors led to the need for sustainable development as if left unchecked it can cause irreversible damage to environment.

* Write short note on Environmental education.

Environmental education is an integral process, which deals with man's interrelationship with his natural and man made surroundings including the relation of population growth, population, resource allocation and depletion, conservation, technology, urban and rural planning to the total human environment.

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• Importance :

- 1 It gives us the basic understanding about various aspects of environment and its associated problems.
- 2 It imparts the knowledge of eco-friendly techniques to be used in various fields.
- 3 It helps to promote the use of non-conventional energy resource such as solar energy, wind energy etc.
- 4 It teaches the concept of sustainable development.
- 5 It develops skills to identify environmental problems and their solution.
- 6 It teaches us how to conserve energy and save our planet.

• Objectives :

- 1 To increase awareness of environment among people.
- 2 To increase the knowledge of environment.
- 3 To improve skills for solving environmental problems.
- 4 To increase participation and develop a sense of responsibility.

• Principles :

- 1 Environmental Education considers environment in it totally.

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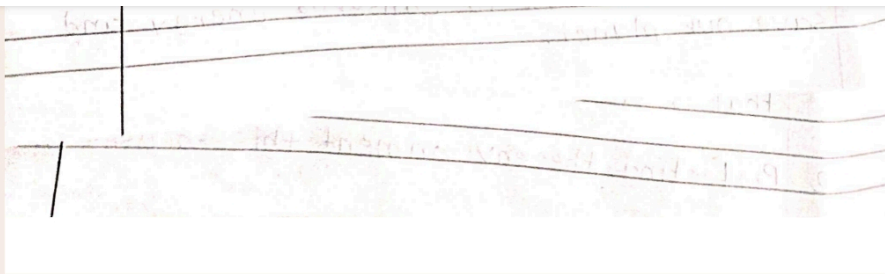
• Principles:

- 1 Environmental Education considers environment in it totally.
- 2 Environmental hazards are controllable and every citizen has a moral obligation.
- 3 To appreciate the gifts of nature.
- 4 Concerns of environment are concerns of several agencies.
- 5 To help and understand the effect of over population and over exploitation of natural resources.

* Write a short note on the role of environmental engineer.

1. Environmental engineers make environmental strategies like evaluation of environmental strategies like steps for an improvement.
2. They conduct research on proposed, analyse scientific data, and perform quality control checks by environmental impact assessment.

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* Write a short note on the role of environmental engineer.

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3. They do the design, construction and operation of municipal water supply systems for providing safe drinking water to people.
4. They do the design, construction of sewage treatment plants depending upon the characteristics of waste water.
5. They also design various treatment technologies for municipal industrial solid waste management.
6. They deal with the concept of recycling and reuse of waste water.
7. They also keep in mind to protect natural resources from the effects.
8. They provide legal and financial consulting on matters related to the environment.

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9. They are also involved in the protection of wildlife.
10. They are concerned with local and world wide environmental issues.
11. They also design sewage and storm water drainage network for proper disposal of


resources from the effects.

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2. Ecology and Ecosystem

1. Define Ecology and explain scope of ecology.

→ Ecology: Ecology is a Greek word. Oikos means house, logos = Science)

Ecology is branch of Biology.

Ecology is closely related to abiology.