Read the question carefully and address exactly what is asked, avoiding unnecessary deviation.

Start with a clear and relevant introduction that shows understanding of the topic.

Structure the answer logically: introduction, explanation/analysis, and a brief conclusion.

Use correct scientific terminology (e.g., biodiversity, sustainability, carbon cycle, eutrophication).

Explain concepts clearly and accurately, avoiding vague or generalized statements.

Support answers with relevant examples, preferably from Pakistan or global case studies where appropriate.

Include data, statistics, or facts (e.g., temperature rise, deforestation rates) when relevant to strengthen arguments.

Incorporate environmental laws, agreements, or protocols (e.g., Paris Agreement, Kyoto Protocol, SDGs) where applicable.

Show cause-and-effect relationships in environmental processes.

Focus on analysis and application rather than rote definitions.

Present balanced views by mentioning impacts, challenges, and possible solutions.

Use diagrams, flowcharts, or cycles (carbon cycle, water cycle, food chain) where helpful and ensure accuracy.

Label diagrams properly and keep them neat and relevant.

Use headings, sub-points, or bullets to improve readability and clarity.

Date: Day:

Environmental Sciences

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Answer: 6

Part-H

Solid waste Management:

It is the process of managing and controlling the solid wastes. The process of collection, processing and disposal of solid waste is called solid waste management.

Process of solid waste management:

The process of solid waste management include the following steps

1- Collection of solid waste:

The first step of solid waste management is the collection of the solid waste from

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different site through the use of manpower, machines and vehicles.

2. Processing and Recycling of the solid waste:

The solid wastes which is collected is processed and arranged. The processing of recycling is carried out.
The classification of solid wastes is carried out and then process of recycling occurs i-e

- Recycling solid wastes: metal, plastic etc.
- Biodegradable solid waste.
- inert solid waste
- e-solid waste

3. Waste Disposal:-

The remaining solid waste is non-recyclable and is disposed off. there are four common methods for solid waste

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disposal.

1- Incineration:

It is the process through which the solid wastes are burnt through the incinerators. It is one of the effective ways of solid waste.

2- Land-fill method:-

It is the process through which the solid wastes are burried into the land. It is also the effective ways for the solid waste management.

3- Decomposition/composting:-

The organic and biodegradable solid waste are chemically treated which results in the formation of compost used as a fertilizer.

This method can only be used for biodegradable and organic solid wastes.

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4- Open dumping:-

It is the method in which the solid wastes are collected and dumped in a particular place. This is the less efficient way of solid waste management.

Salient Features of Pakistan's National Solid Waste Management Policy, 2022:-

1- Policy Purpose and scope.
   ↳ Addressing critical waste challenges.
   ↳ National and International Obligations.

2- Clear Definition and Classification of solid waste.

3- Key objectives of solid waste management.

4- Guiding Principles for solid waste.
   3Rs (Reduce, reuse, recycle)

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5- Regulation and Institutional framework.

6- Capacity building and public awareness

7- Financing and Economic incentives.

B Biodiversity:

The varities of life foms either plants, animals or microbes living on the earth, water or air is called biodiversity.

Importance of Biodiversity:

The varities of life on the earth has many importance some of them are given below.

1- Food security:

Biodiversities are very much important for the food supply of the earth. They ensure

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The food supply for each others.
i-e
Plants → Fruits
crops → Food
Animals → Meat and milk
Birds → meat and eggs.

2- **Environmental Balance:**

The life forms on the earth ensure the environmental balance. It ensure
Plants → Filtration of air
forests → source of oxygen
Plants → habitate for animals

3- **Furniture and Timber:**

Plants can be used for the purpose of to furniture and timber. Woods are used to make the chairs and beds and doors while it is also used for the purpose of burning to make fire.

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4- Medical Purpose:-

Many plants products are used for the purpose of medicine production.

i-e Antibiotics and multi-vitamins produced by plants.

↳ many bacteria are used for the antibiotics and harmones production.

↳ Lab animals are used for vaccine production.

Causes of Biodiversity loss:-

Some of the causes of biodiversity losses are given below.

i- Climate change

ii. Natural disasters like

↳ floods

↳ earthquakes

↳ lightning

↳ scarcity

↳ cloude bursts.

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iii- Water Pollution
iv- Air Pollution
v- Land pollution
vi- Urbanization
vii- extreme weathers
viii- Deforestation
ix- Eutrophication
x- Global warming.
xi- Global wars

Effects of Biodiversity loss:-

The common effect of Biodiversity loss are.

↳ Scarcity of food
↳ Disturbed food chain.
↳ Imbalanced environment.
↳ climate change
↳ Air pollution
↳ Lack of oxygen in air
↳ Water pollution
↳ Lack of fresh water
↳ melting of glaciers
↳ No raw material for industries
↳ No raw materials for medicines
↳ Natural disasters etc.

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Answer : 07

Food Insecurity:

The condition in which the individuals lack the reliable access to the food and nutrients and they donot get enough food and nutrient that is normally required for the active and healthy life-

Sources of food:

Biodiversity is the major sector of the food supply. Some of the important forms of life are:

- Sun: major source of energy.
- Planets: Important for fruits
- Agricultural crops: Important for food requirements
- Animals: Important for meat and milk.
- Birds: meat and eggs.

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Global warming:-

The gradual heating process of the earth atmosphere due to the trapping of heat in the imbalance gases of atmosphere and pollutants is (Green house Effect) is called Global warming

Global Warming as a Threat to Agriculture:-

Global warming has been posing a threat to agriculture because of the consequence of the global warming which directly destroy the agriculture and leads to food insecurity. Some of the harmful consequences posed by the global warming and affecting the agriculture are given below -

1- Rise in atmospheric Temperature:

Global warming causes the rise in the natural atmospheric temperature which cause the inhospitable and inappropriate condition for the crops. Hence it poses a direct threat to the agriculture.

2- Global warming leading to Natural Disasters:

Global warming leads to natural disasters like floods and cloud burts which directly destroy the crops and reduces the production of crops Hence it directly poses threat to agriculture.

3- Rising of Sea Level:-

Global warming cause the rise in the sea level due to the melting of the glaciers

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This rise in sea level leads to the sinking of agricultural lands which causes shortage of fertile land for the agriculture purpose. Hence it leads to the threats to agriculture.

4. Desertification:-

The excessive heat of the earth lead to the evaporation of the water trapped in soil and causes desertification which results into the lack of fertile land for the agriculture purpose.

Measures to Prevent Global Warming:-

Some of the measures to prevent global warming are-

i- Planting more trees.(Afforestation)
ii. Increasing green belts (forests)
iii- Stopping deforestation
iv- Ensuring sustainable use of natural resources.

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v- Controlling air pollution.
vi- ensuring the filtration of smoke coming out of the industries.
vii- Avoiding Global wars
viii- Promotion of electric vehicles for transportation.

B. EIA:

Environmental Impact Assistance.

It is the process to used to identify, evaluate, predict, analyze, reduce or avoid the impact on the environment due to any project or program.

Objectives of EIA:

EIA aims to;

- Preservation of natural resources.
- Effective and efficient use of natural resources
- Preservation of sustainable environment for future
- Controlling air, water and land pollution

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Process of EIA:

The process of EIA include the following steps.

1- Screening of the Project:-

The project is screened thoroughly. The duration of the project, the extent of the project and location of the project is analyzed.

2- Scoping of the Project:-

The scope of the project is evaluated, the employment it will produce, the benefits it will produce and public welfare it will create. All these aspects are evaluated.

3- Data collection of the Area:-

The basic data of the particular location is collected like:

P.T.O.

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like,

- ↳ Population of the area.
- ↳ Air quality of the area.
- ↳ Green area & plants in that area.
- ↳ The wates bodies and pollution of the area.
- ↳ The aquatic life of the area.
- ↳ Wild animals
- ↳ Schools and hospitals in the area.
- ↳ Public areas and housing.
- ↳ Noise pollution

4- Prediction of the Impact on the Environment:-

In this step the possible outcomes and effects on the natural surrounding is evaluated like

- ↳ water pollution
- ↳ land pollution
- ↳ Noise pollution
- ↳ air pollution
- ↳ Effects on aquatic life.

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↳ Effect on air quality
↳ Effects on human health.

5- **Long Term Impact Predictions-**

The long term impacts on the environment are predicted. like

climate change
Global warming etc.

6- **Controlling Measures:-**

The controlling measures are suggested to the project owner which are always binding on him. the measures includes reduction or avoiding or modifications in the project.

7- **Public Participation:-**

The public of the area are participated in the project so that to make the project effective and reduce its impact on the public.

add flowchart

DATE:

8- Project Monitoring:-

The project is monitored during the construction to ensure the construction according to prescribed controlling measures.

9- Project Audit:-

After the completion of the project the construction and the project is checked. The EPA check all the factors with the checklist ~~so that to ensure~~ Hence the environmental Audit is passed.

Benefits of EIA:

Benefits of the EIA are.

- Efficient use of natural resources
- Protection of natural resources
- Ensure environmental ~~pol~~ sustainability
- Ensure more benefits of the project as compared to its impact.
- Prevent Natural disasters.

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Answer: 03:

A- Eutrophication:

It is The excessive growth of plants and algal bodies in the water due to ~~which~~ the excessive growth factors in water bodies leading to the death of aquatic life is called eutrophication.

Types of Eutrophication:

There are two types of Eutrophication.

1. Natural Eutrophication:

It is the type of eutrophication which is not harmful and requires too much time.
It is a natural process and do not involve the human involvement and interferences.

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2- Cultural Eutrophication:

It is the process of eutrophication that is accelerated by the human activities.

- ↳ It does not require long time.
- ↳ It is harmful in nature.

Process of Eutrophication:-

- ↳ Excessive growth factors in waters.
- ↳ Growth of algea on surface and plants at bottom.
- ↳ Algea is preventing sunlight entry to the water body.
- ↳ Plants inside the water dies.
- ↳ The plant body is decomposed inside the wates by consuming all the oxygen inside.
- ↳ The suffocating environment leads to killing and death of the aquatic life.

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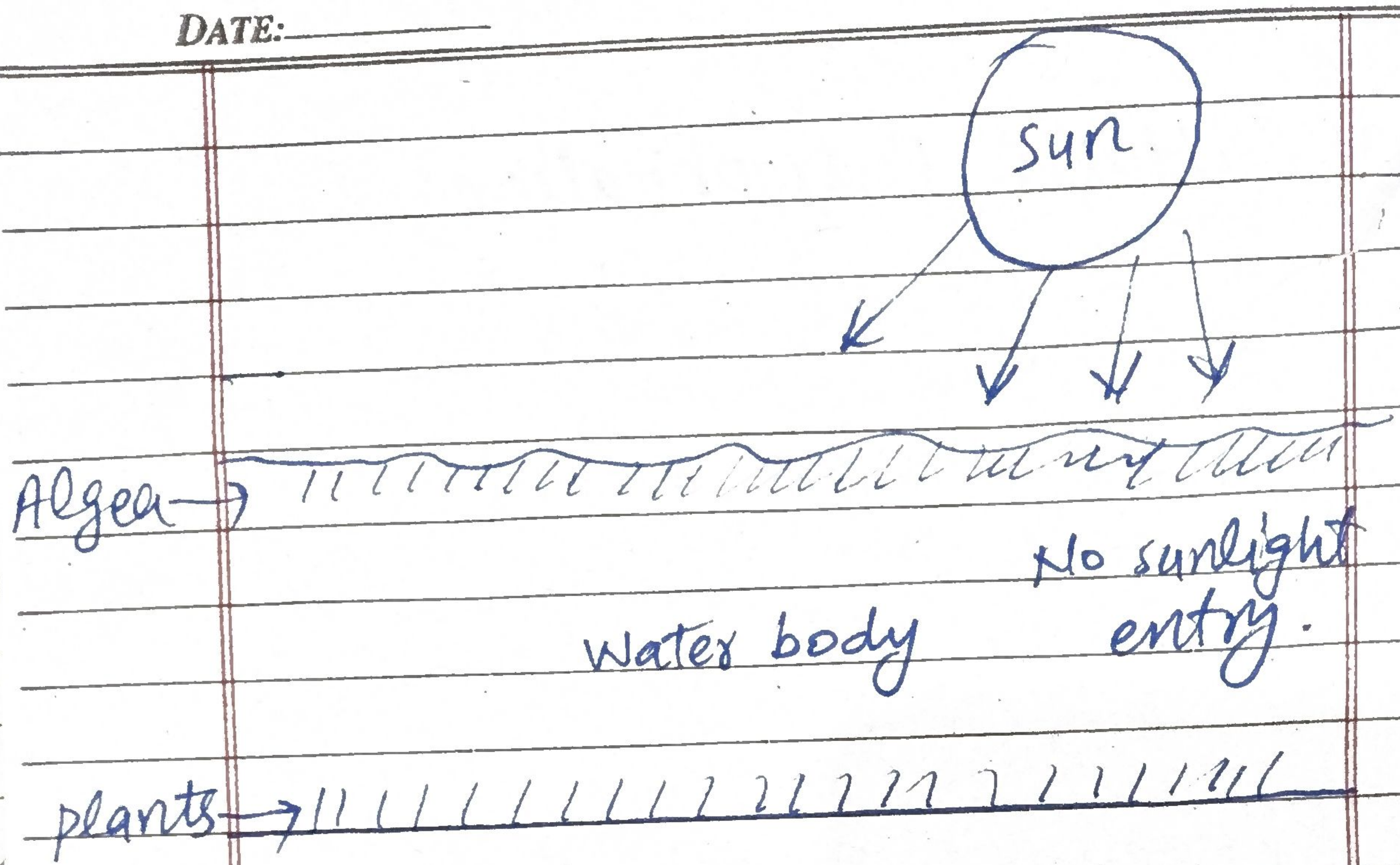

Controlling measures:-

To control the eutrophication. we have to,

- Reduce use of fertilizers.
- Increase use of biofertilizers.
- Treatment of agricultural run off water.
- Solid waste management
- controlling land pollution
- controlling water pollution
- treating the Industrial waste before entry to water body.
- Implementing SDG's
- water waste management
- International cooperation.

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B- Green House Effect: (GHE):

The effect through which the ~~temper~~ heat energy is trapped in the green house gases molecules like CO_2, CH_4, CFCs etc which leads to the rise in the atmospheric temperature is called green house effect.

Global Warming:-

The gradual rise in the temperature due to the green house effect is called Global warming.

Depletion of Ozone Layer in Relation with Global Warming:

~~Ozonon~~
Ozone layer:-

It is the layer of O_3 gas in the stratosphere of the atmosphere which filter the ultra violet radiation of the sun.

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Global warming leading to the Ozone layer depletion:

As we know the Global warming is caused by the green house gases. The excessive green house gases like CFC's reacts with the O_3 gas in the stratosphere and leads to the depletion of the ozone layer.

Effect of depleted ozone layer on global warming.

When the ozone layer is depleted. The high energy radiations (ultra violet radiations) easily come into the atmosphere which causes excessive and accelerated heating of the atmosphere. Simply accelerating the process of global warming.

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Answer: 08

A: Agenda-21:

It is comprehensive global ~~plan~~ action plan for sustainable development adopted at the 1992 Earth summit.

The number 21 refers to the 21st century, highlighting a long-term commitment to balancing environmental protection and social equity.

Objectives:-

- Promote sustainable development world wide.
- Integrate environmental protection
- Reduce poverty
- Improve life standards
- Protect natural resources
- strengthen role of governments and international organizations in sustainable development.

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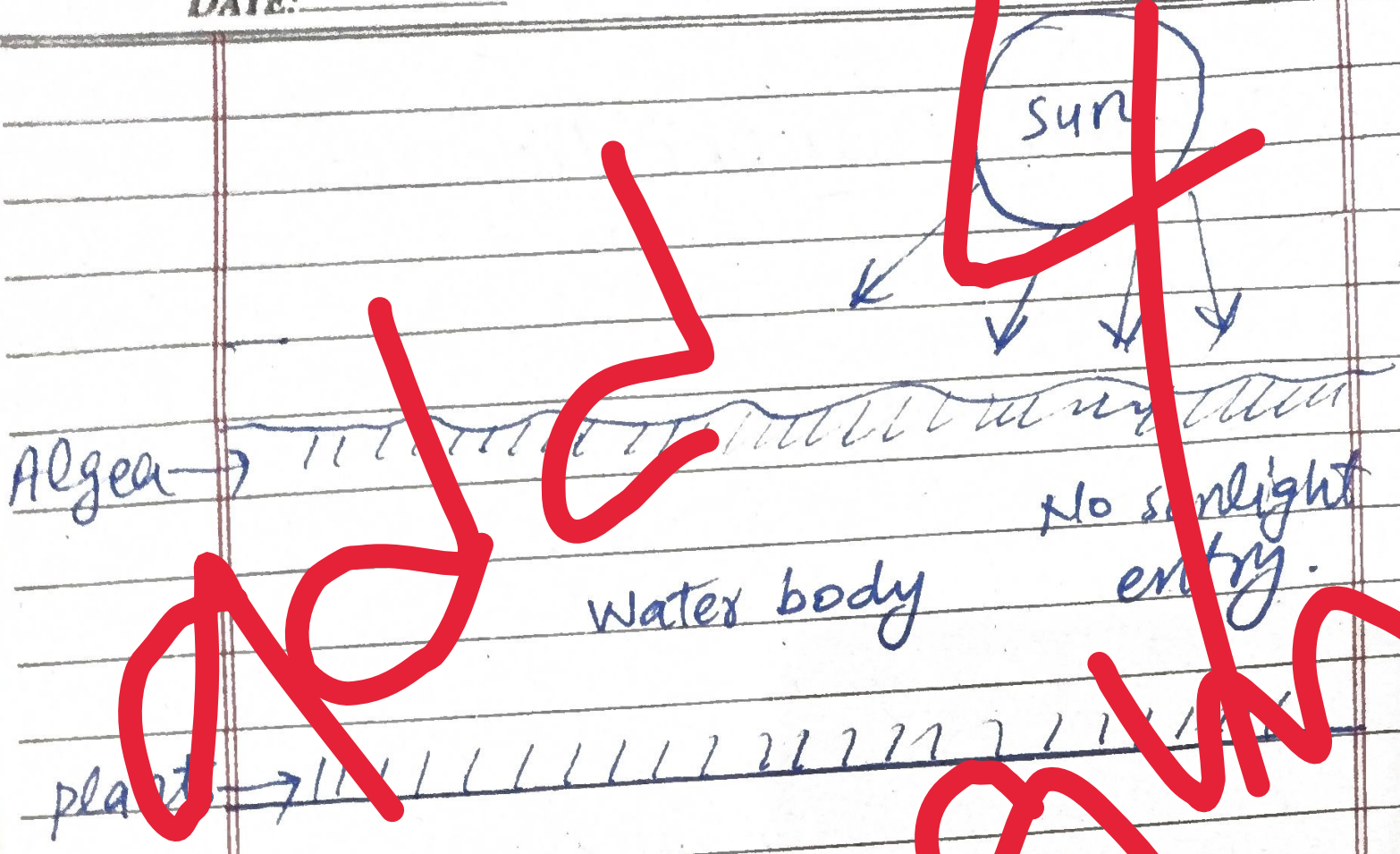

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