

QUESTION NO. 1

(PART NO. A)

Green House Effect :-

Green house effect is a natural process in which gases trap, absorb and scatter heat. The source of heat is solar radiations.

Green House Gases and Global Warming:-

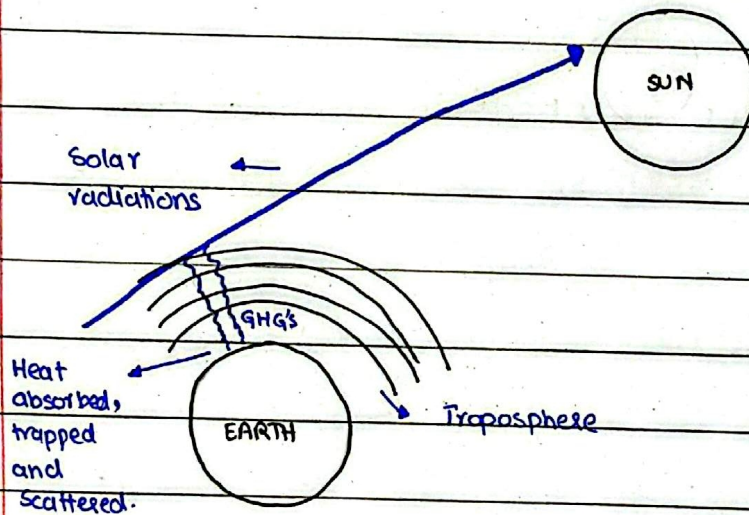
There are green house gases which have accelerated the green house effect. It is referred as Enhanced Green House Effect. This causes global warming. Following are the green house gases (GHG's) contributing in global warming :

- 1) CO_2 (carbon-dioxide) contributes 61% in global warming.
- 2) Methane contributes 14% in global warming.
- 3) ChloroFloro Carbon (CFC) contributes 11% in global warming.
- 4) Nitrus oxide contributes 4% in global warming.
- 5) water vapors and ozone, together, contribute 9% in global warming.

Causes of Enhanced Green House Effect :-

Following are the causes of enhanced green house effect leading to global warming:-

- 1) Burning of fossil fuels in industries and power plants
- 2) Deforestation
- 3) Urban development.
- 4) Ozone Depletion.



Green House Effect and Global Warming

Conclusions:-

Green House effect is a natural phenomenon, in which heat is trapped, absorbed and scattered. This is accelerated due to various reasons, and hence, contributing in global warming.

(PART NO. B)

Vitamins :-

Vitamins are essential part of a balanced diet. They are micro-nutrients required for healthy functioning of body.

Types of Vitamins:-

Vitamins are primarily of two types:

- 1) Fat-Soluble vitamins.
- 2) Water-Soluble vitamin.

1) Fat Soluble Vitamins:-

These vitamins include A, D, K, and E.

Main source of these vitamins are milk, almonds, fish, peanuts, oil, omega 3 (fish oil).

Functions of these vitamins include good bone health, teeth health, hair, skin, eye-sight.

Deficiency of these vitamins can lead to bone issues, weak teeth, hair fall, dry skin, night blindness.

2) Water Soluble Vitamins :-

Water soluble vitamins include vitamin B and vitamin C.

Vitamin B is further classified into complex vitamins. (B_1 , B_2 , B_3 , B_5 , B_6 , B_{12})

Main sources of these vitamins are meat, fish, citrus fruits (vitamin C).

Functions include hormonal balance, skin health, muscle health.

Deficiency of these vitamins can lead to imbalanced hormones, weak muscle health.

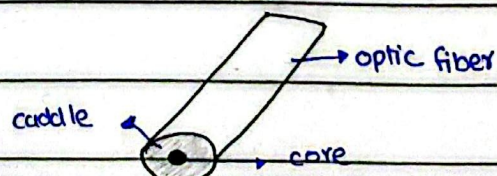
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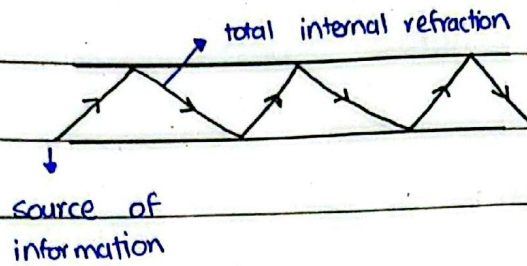
Optic Fiber :-

Optic fiber is optic glass cable used to transmit large files and data in less period of time.

Optic fiber contains a core and cladding.

By the process of total internal reflection, information is transmitted from one user to another user.





This process takes place at the boundary of core and cladding.

Importance of Optic Fiber:-

Optic fiber is an advanced form of cable used for transmission of information and data. Following are the important features of optic fibers:-

- 1) Fast transmission of information
- 2) Optic fiber network line can be underwater and under-ground.
- 3) More sustainable as cannot be broken easily.
- 4) Takes less surface-area than normal cable networks.

Conclusion:-

Optic fiber is an advanced cable which is used to transmit data and information. It is a sustainable, fast and environment friendly cable.

(PART NO. D)

Water Pollution :-

Water pollution is a pollution in water and under ground water, caused by various air and land pollutants.

Types of Water Pollution :-

There are different types of water pollution. Following are few :

- 1) Industrial Waste Water pollution
- 2) Plastic waste water pollution
- 3) Oil-spill water pollution
- 4) Water pollution due to air pollution.

Sources of Water Pollution :-

There are multiple sources of water pollution :-

- 1) Plastic bags thrown in rivers
- 2) Oil-spill during transport in oceans
- 3) Acid rain
- 4) Hospital waste
- 5) Industrial waste

Controlling Measures of Water Pollution:-

Water pollution can be controlled by taking multiple steps:

- 1) & supervised disposal of hospital and industrial waste.
- 2) Ship / transport security to avoid oilspill.
- 3) Reduction in air pollutants to avoid acid rain.
- 4) Awareness regarding water pollution to reduce it.

QUESTION NO.3

(PART NO. A)

Global Warming:-

Global warming is a phenomenon in which temperatures are extreme and tend to rise, leading to disruption in nature.

Effects of Global Warming in Pakistan:-

Pakistan is effected by global warming, even though it has minimum contribution to global emissions. Following are the effects of global warming on Pakistan:

1) Glaciers are melting, causing an increase in water level.

2) Water scarcity due to decrease in fresh water.

3) Floods in urban areas, agricultural land and remote areas.

This led to food insecurity in Pakistan as crops were lost during floods.

4) Extreme seasons in Pakistan. Summers and winters are facing extreme conditions.

5) Snowfall takes place in month of January.

As historically recorded, under normal circumstances, snowfall took place in months of late November and December.

6) Extended summers in Pakistan. Summers are now recorded to last 6-7 months a year.

7) Deforestation in Pakistan has led to intensified effect of global warming.

8) Urbanization is another reason.

9) Cloud burst, which was recorded in 2025 is due to global warming.

Suggestions to Mitigate Global Warming Risk:-

Following are the suggestion to reduce global warming in Pakistan:

- 1) Reforestation in Pakistan
- 2) Managed urbanization in Pakistan
- 3) Population control
- 4) Verticle urbanization and sponge cities in Pakistan.
- 5) Construction of small dams and lakes to improve water table underground.
- 6) Improvement is disaster management system to avoid adverse effects of global warming.

(PART NO. B)

Balanced diet is when intake of carbohydrates, proteins, fats, minerals and vitamins are in required amount.

Importance of Balanced Diet :-

Balanced diet is essential for healthy working of human body. An unbalanced diet can lead to failure of certain organs in human body. Balanced

diet is required for muscles, brain function, healthy heart, blood, skin, hormones, eyes and all other organs to work properly.

Disorders Associated with Unbalanced Diet :-

Following are the disorders associated with unbalanced diet:-

- 1) Anemia
- 2) Muscle tension
- 3) Night-blindness
- 4) Weak mental health
- 5) Uric Acid
- 6) Hair fall
- 7) Dry skin
- 8) Hormone imbalance
- 9) Weak bones
- 10) cholesterol.

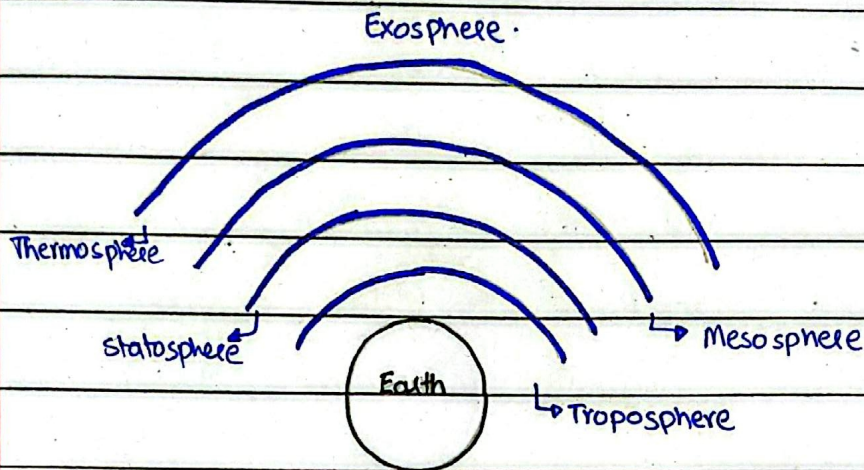
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There are five layers of atmosphere,

- 1) Troposphere
- 2) Stratosphere
- 3) Mesosphere

4) Thermosphere

5) Exosphere.



1) Troposphere:-

Troposphere is upto 12 km from earth which consists of air. The air in this layer consists of nitrogen, oxygen, carbon-dioxide and water vapors.

This is essential for life on earth.

2) Stratosphere:-

This is second layer which is 50 km. This layer consists of ozone layer which protects from solar radiations and UV rays.

3) Mesosphere :-

This is third layer of Earth's atmosphere. This extends to 80 km. In this layer meteoroids burn.

4) Thermosphere :

This is fourth layer in which ^{there are} satellites. ~~are launched~~ All kinds of satellites are found in this layer.

(PART NO. D)

Solid Waste Management :-

Solid waste management is a supervised process of collection of waste material from generation point, to its recovery and disposal.

Solid waste management has three steps :-

- 1) Collection from generation points
- 2) Recovery of organic or recyclable waste.
- 3) Disposal of remaining waste.

Disposal methods of solid waste:-

Solid waste requires disposal methods. Following are the disposal methods:

1) Open Deposition :

In this method, solid waste is thrown in open areas to decompose. This method is most unwanted and dangerous for environment.

2) Composting :

In this method, organic waste is decomposed in a controlled biological method. This is most favorable for environment.

3) Incineration :

In this method, industrial waste and hospital waste is burnt on incinerators.

4) Land-filling :

In this method, solid waste is burnt underground by filling the land close to cities.

Composting

Most preferable

Incineration

Land-filling

Open-Dumping

Least preferable