

Question no. 1)

— (a) —

Define Green house effect:

Green house effect is climate related phenomenon in which increasing concentration of green house gases like nitrogen oxides, carbon oxides particularly CO_2 , CH_4 and sulfur gas oxides that entrap the reflect waves from earth within environment causing increase in temperature.

Green house Gases:

- 1 Methane gas CH_4
- 1 Carbon dioxide CO_2
- 1 Nitrogen oxides NO , NO_2
- 1 Sulfur oxides
- 1 water vapours.

Elucidation of Phenomenon:

The phenomenon of GHE has been occurred in the atmosphere particularly in troposphere ranging from (1-18km) earth surface. There are numerous green house gases present in the troposphere

like CO_2 , CH_4 , NO_2 , SO_2 , water vapours. Now, there are two types of rays that come from the sun.

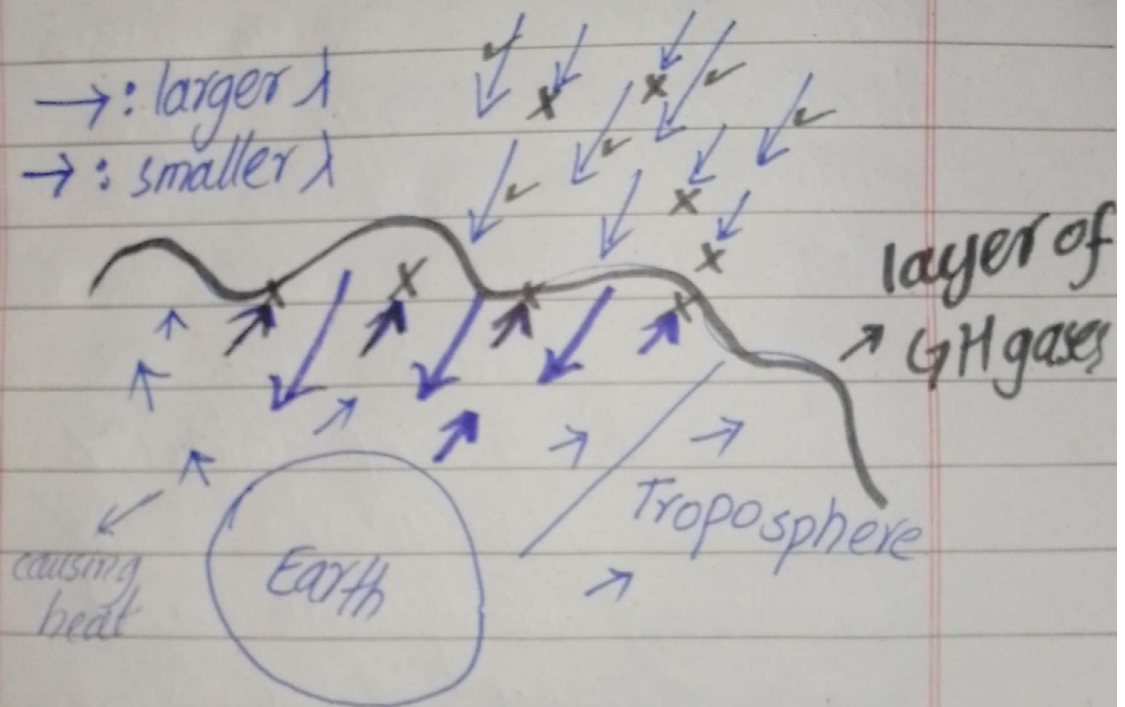
One type with longer wavelength and other with lighter or smaller wavelength. The

layer of green house gases permitted ~~longer~~ wavelength

waves while restricting ~~long~~ small wavelength based are prohibited.

Similarly, when these rays reached earth and ~~reflected~~ back their longer wavelength converted

smaller wavelength. But GH~~g~~ gases do not allow smaller wavelength based rays to escape. Therefore, these rays create heat in the troposphere. When there would be huge ~~am~~ amount of GH^g gases present then these would create more heat in the atmosphere. This phenomenon is called Green house effect.



X : cannot pass
✓ : can pass

Global Warming:

Due to increase in greenhouse gases, the temperature of the earth is increasing day by day. This effect of greenhouse gases is called Global warming.

Global warming ~ Eroding Life on Earth:

1 Due to Global warming, earth planet is facing severe heat waves making life difficult to exist.

2 It causes numerous changes in earth structure and melting of glaciers. This further increases the frequency of floods and rise of sea level.

(b)

Introduction :

Vitamins are those essential elements for human food which are required in less quantity but have necessary role. The absence of the vitamins can intricate numerous diseases. On the other side, the vast use of vitamins can cause disorders as well. Therefore, these are essential requirements of human but in small/minute quantity.

Define Vitamins:

Vitamins are essential nutrients pertinent of human food which are required in ~~minute~~ minute quantity.

Discovered: It was Hopkins who discovered vitamins.

Types of Vitamins

There are two types of vitamins

- 1) Water soluble
(A, D, E, K vitamins)
- 2) Fat soluble
(B and C complex)

Function of Vitamins:

Vitamins are required to maintain required ~~time~~ presence for lubrication. Moreover, vitamin A is necessary to maintain human eye sight. Further, vitamin D is required for hardness of bones and joint. Vitamin B and C complex are required for primary mental health.

Sources of Vitamins

1 Source of vitamin D is

Sun 1 Source of vitamin A, K, and E and vegetables particularly cabbage and carrot.

2. ~~Sources~~ is source of vitamin

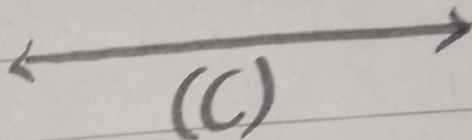
C. 1 Fish is source for vitamin B.

Deficiency disorders

The deficiencies of vitamins causes myopia while rickets in case of vitamin D. The absence of vitamin B and C can create weakness in brain muscles.

Conclusion:

To encapsulate, vitamins are required nutrients for human health in minute quantity. These deficiency and excess can cause numerous diseases.



Optical Fibers:

Optical Fibers are essential material in which light travels with very high speed and with very small distortion. The presence of cladding and core make sure total internal reflection and.

smooth flow light wave.

Construction:

Elements : cladding, core, upper plastic body

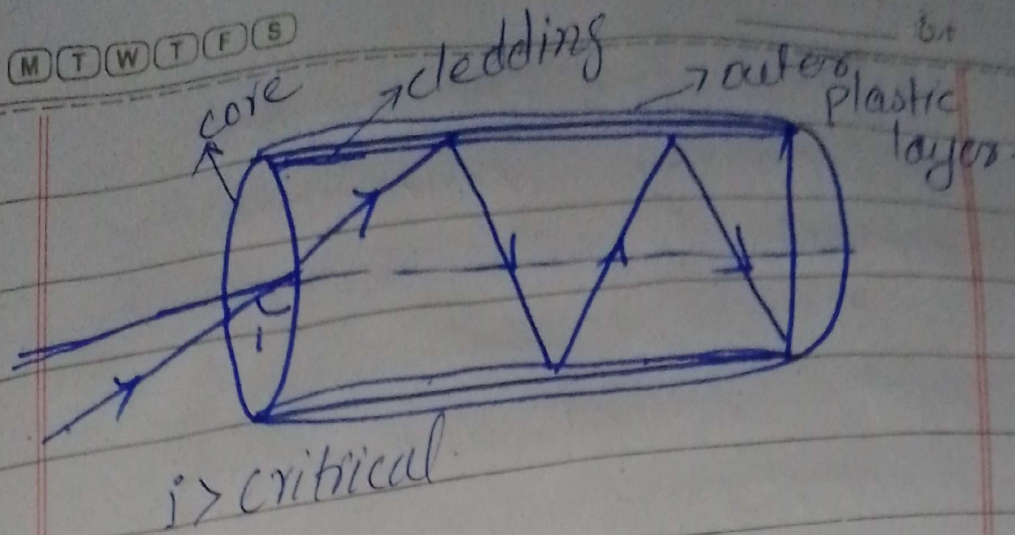
Explanation:

The light passes through core and entered in internal structure. The refractive index of cladding is ~~less~~ ^{less} than core. This helps to propagate total internal reflection.

Principle of Working:

The light passes through opticle fibres by the principle of total internal reflection.

When incident angle of coming ray is larger than critical angle of core, ray acted on the principle of total internal reflection.



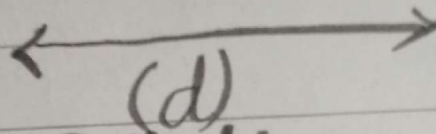
Speed: The light passes with very high speed of $500,000 \text{ km/sec}$.

The above given properties with plastic and hard material quoted fiber makes more convenient and passes information with very small time.

Importance:

- 1) It transports data with very high speed and with no loss.
- 2) It is source of communication through internet with no distortion and in small chunk of time.

- 3) It helps to initiate e-learning educational system with high efficiency.
- 4) It is the most important useful network for online diagnosis in medical sciences and performing online surgeries.
- 5) Its importance in e-employment, online working, business and commercial is undeniable.



Water Pollution:

Water Pollution means contamination of water resources ~~for~~ which is useful for human use. These numerous pollutants like industrial wastes, domestic waste, dead bodies of animals and urban wastes that contaminate the water and make it unuseful for humans.

Types of Water Pollution:

1) Domesticated Water Pollution

(Poor drainage system, rapid urbanization and poor domestic water services).

2) Industrial Water Pollution

(Industrial effluents, poor management and lack of drainage system).

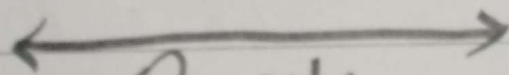
Sources:

Huge industries like Noon Sugar mill, domesticated effluents, poor drainage system in urban areas, dead bodies of animals and birds are the major sources.

Measures:

- 1) Efficient drainage system
- 2) Control urbanization
- 3) Awareness about domestic water pollution and wastage.

- 4) Strict surveillance on industries like Noon Sugar mills, textiles industries etc.
- 5) Proper check and balance on Munciple Committee of drainage.
- 6) E-employment and efficiency in drainage system.
- 7) Better Use of technology in spotting error in drainage system like use of altersonics.



Question no-3

(a)
Global warming:

The increasing temperature of world due to green house ^{gases} ~~effect~~ concentration in troposphere is called Global warming.

Global warming Effects on Pakistan:

Pakistan is facing severe consequences of climate change due to global warming. Here is the list of those effects which Pakistan is currently facing.

- 1) Intense increase in temperature : severe heat waves in summer
- 2) Rapid melting of glaciers
- 3) Recurring severe floods.
i.e. 2018, 2022, 2025
are recorded highest effects.
- 4) Increase in landslides in hilly areas
- 5) Severe droughts in Sindh : 22% of area got barren.
- 6) Blockage of territorial connections

Measures:

- 1) In order to cope up with floods, only dam construction is efficient method.
- 2) Early warning system and early evacuation using advance technology can reduce damage.
- 3) Climate resilient infrastructure is required.
- 4) Proper Awareness centers about climateous challenge and training system.
- 5) Increasing coordination between units and center and integration ^{blw} local government and provincial leaders.
- 6) Reforestation and Plantation are required simultaneously at large scale.
- 7) ^{collaboration} International level for perceiving climateous effects on developing countries and joint response.

If we take the above steps, the intensity of climate change and destruction can be better managed.

(C)

Atmosphere and Strata:

The planet earth has been covered atmosphere ranging from 1-500km outward. It consists of

1) Troposphere

1-18 km: temperature: $37^{\circ} \rightarrow -56^{\circ}$

2) Stratosphere (Strata)

$-56^{\circ} \rightarrow +2^{\circ}$

3) Lithosphere

$-2^{\circ} \rightarrow +300^{\circ}$

4) Hydrosphere

$-300^{\circ} \rightarrow +200^{\circ}$