

Q.1 Define earthquake. How do the tectonic plates move?

Answer: Earthquake

"A sudden release of energy in the form of seismic waves that create vibrations in the earth's crust."

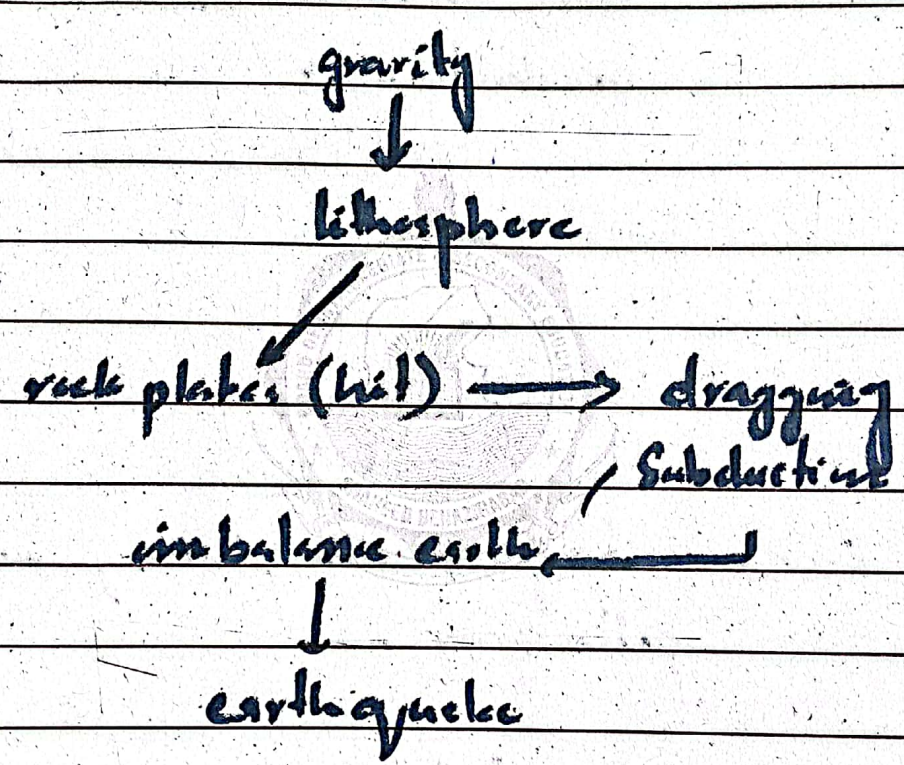
When a sudden release of elastic energy comes out in the form of seismic waves, it causes vibration on the earth, this known as earthquake or shaking of the earth.

Movements of tectonic plates

"Gravity is a driver of movement of tectonic plates."

Gravity is a respon.

sible force. It causes lithosphere
 rocks to move and hit with
 other rocks. Resultantly, denser
 plates of rocks drag lighter plates
 and causes imbalance of the earth,
 this process is known as subduction.



• slowest of movements of tectonic plates

Qb) What do you know about fertilizers?
 How excessive use of fertilizers

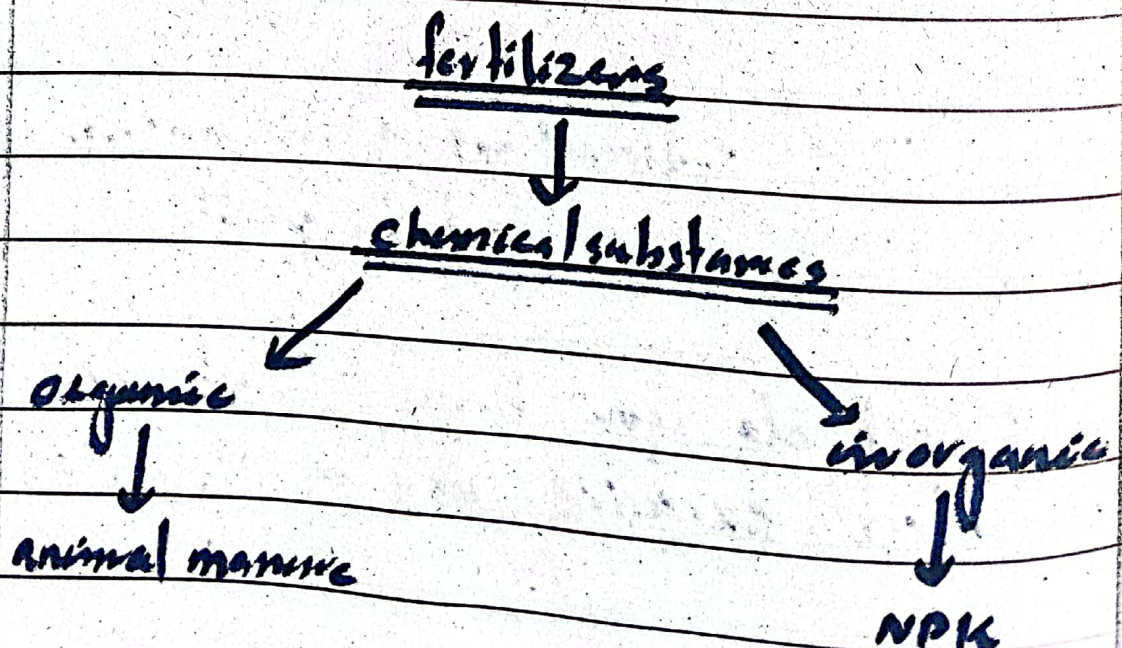
is harmful?

Answer

Fertilizers

"Fertilizers are organic and inorganic chemicals that increase soil productivity."

Fertilizers are chemicals. These are used to improve soil nature and help in a huge productivity. Moreover, fertilizers can be organic and inorganic. i.e., nitrogen, phosphorus, and potassium.



Harmful effects of excessive use of fertilizers

Following are harmful affects.

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- i) Excessive use of fertilizers causes ground water pollution.
- ii) Use of fertilizers in abundance causes soil nature acidic.
- iii) Excessive use of fertilizers leads to stunt growth of plants and vegetation.
- iv) Excessive use of fertilizers causes certain human diseases including, kidney and liver problems, and affects immune system.
- v) Excessive use of fertilizers also causes air pollution and environmental problems.

Qc) Define optical fibre. Also describe its advantages and disadvantages.

Answer Optical Fibres

"Optical fibres are glass strands that transmit light rays from one point to other point."

Optical fibres are glass strands. These help in transmitting light rays from one end to other end for telecommunication purpose. Thus, optical fibres are transmitting and receiving rays.

Advantages of optical fibre

Following are advantages:

i) These are faster carrying data platform.

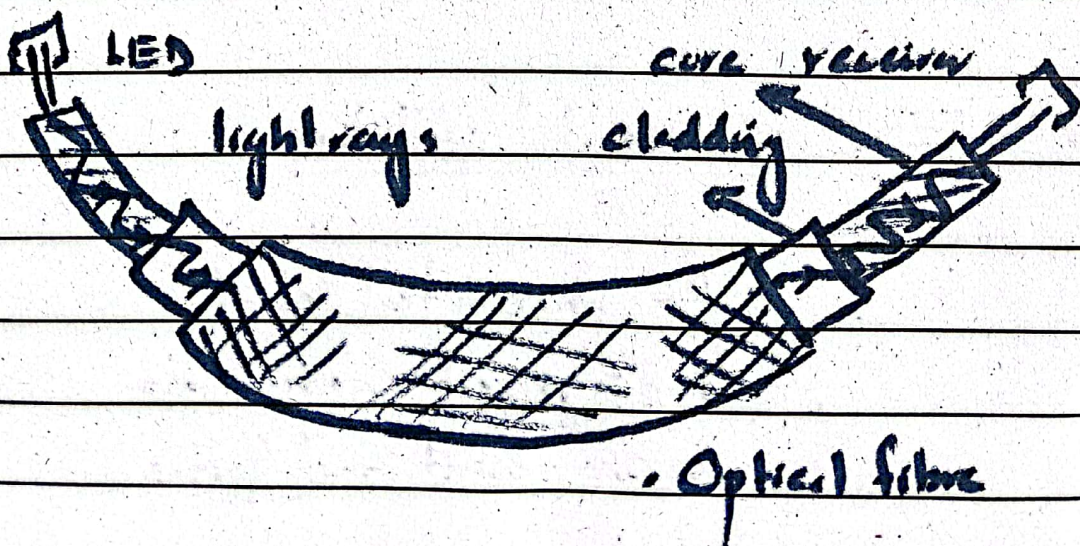
ii) Optical fibres carrying data is secure.

iii) Moreover, optical fibres are lighter in weigh.

iv) Optical fibres carry high capacity of data.

v) These are long-lasting carrying data i.e., 100 years.

vi) Optical fibres are not influenced by external factors.



Disadvantages of optical fibres

Following are

disadvantages:

- i) Optical fibres installment is very expensive.
- ii) These are difficult in handling.
- iii) Optical fibres data may lost while transmission.
- iv) These are vulnerable than copper.

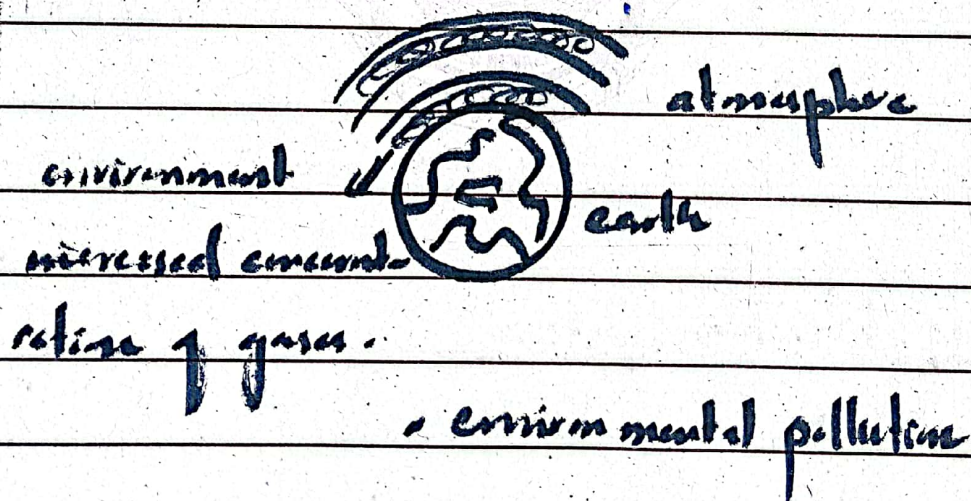
Q.4) What is environmental pollution?
What factors are responsible for environmental pollution?

Answer Environmental pollution

"An unwanted and disapproved change in environment that poses

threat to livable
planet, known as
"environmental pollution".

Environmental pollution
is unwanted change in environment.
In fact, growing concentration of chem-
icals and gases in an environment
makes it harmful. Thus, environmental
pollution is disapproved change in
quality of air of environment.



Factors responsible for
environmental pollution

Following are

responsible factors:

i) Green House Effect (GHE):

Green house effect is responsible for environmental pollution due to increase concentration of toxic gases in troposphere of the atmosphere.

ii) Massive deforestation

Massive deforestation is also responsible for environmental pollution. In fact, massive deforestation leads to decrease concentration of oxygen filtration in environment and causes environmental pollution.

iii) Rapid urbanization

Moreover, rapid unsustainable urbanization also causes environmental pollution. In fact, unsustainable infrastructure urbanization is a cause of environmental pollution.

iv) Use of fossil fuels for energy generation

Use of fossil fuels for energy production also causes environmental pollution. According to the World Air Quality Report, "about 33% of environmental pollution is responsible by combustion of fossil fuels" (The World Air Quality Report, 2019). Therefore, fossil fuels are also responsible for environmental pollution.

v) Use of private vehicles

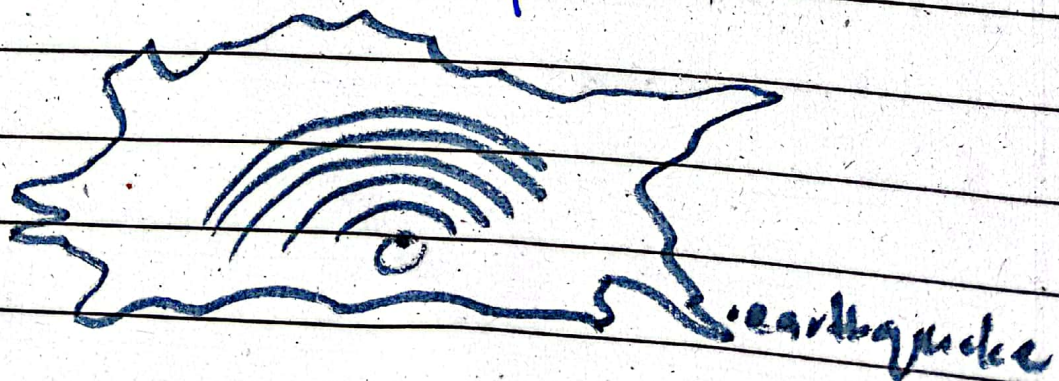
Further, use of private vehicles also causes environmental pollution. Individuals preference to a private vehicle adds unwanted fumes, smokes, and gases in atmosphere. Thus, use of private vehicles causes environmental pollution.

Q.1) What do you know about earthquake. Also describe Richter scale. Give a brief account of earthquakes in 100 words.

Earthquake

"Sudden release of energy in the form of seismic waves that cause vibrations in the earth crust, known as earthquake."

Earthquake is the shaking of earth due to sudden release of energy. In fact, sudden release of elastic energy causes vibration in the earth crust, this is known as earthquake.



Richter scale

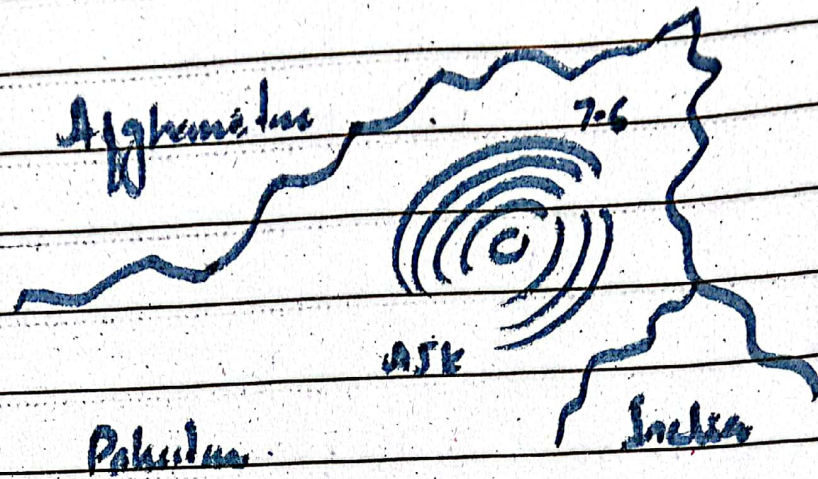
Richter scale was given by an American scientist, Sir John Richter in 1935. Richter scale is a seismographic instrument ranging from 0 to 10 numbers that describe magnitude of the earthquake.



• Richter scale

Earthquake of 8th October 2005

On the 8th October, 2005, a massive earthquake hit Kashmir. Epicenter was Muzaffarabad with magnitude of 7.6. However, it was 80km from the northeast of Islamabad.



5th October, 2005

Q. b) What do you know about floods?
Also describe its causes? Put an
overview on flood of 2002.

Answer

Flood

"A dry piece of land
under water body."

When a dry piece
of land is sub-merged into
water, known as floods. It is
a massive, unbearable disaster that
destroys almost dry land. Therefore,

flood is watery condition of the living place of a particular land.

Causes of floods

Following are causes:

i) Global warming

Global warming is a major cause of floods. In fact, rise of frequent temperature leads to melting of glaciers. Hence, global warming causes floods.

ii) Poor drainage system

Poor drainage system is also a cause of floods. Poor drainage system leads to water capacity high in certain areas. Hence, poor drainage system causes floods.

iii) Monsoons revival

Moreover, monsoons are also responsible for floods. In fact,

irregular monsoons in Sindh and Balochistan causes unprecedented floods.

"Monsoons in Sindh and Balochistan prevented major floods in 2022."

(The UNO, 2022)

Hence, monsoons are responsible for floods.

iv) Breackage of dams

Moreover, breackage of dams also leads to floods. In fact, "about more 19 dams in Balochistan causes floods of 2022." (Pakistan Bureau of Statistics, 2022). Therefore, breackage of dams also causes floods.

Floods of 2022

In 2022, an unprecedented floods occurred in the southern

Part of Sindh and Balochistan. In fact, rainfall from April to May and July to August resulted unprecedented floods in Sindh and Balochistan.

• About 33 million people were affected due to flood of 2022.

(Pakistan Bureau of Statistics, 2022)

Moreover, a table below shows a huge loss due to flood of 2022.

Loss	Number
people affected	33 million
people SBPs	8 million
people died	< 1000
districts affected	≈ 20
livestock loss	3280
infrastructure buildings	2000
economic loss	≈ \$ billion

(Economic Survey of 2022)

Therefore, flood of 2022 was unprecedented.

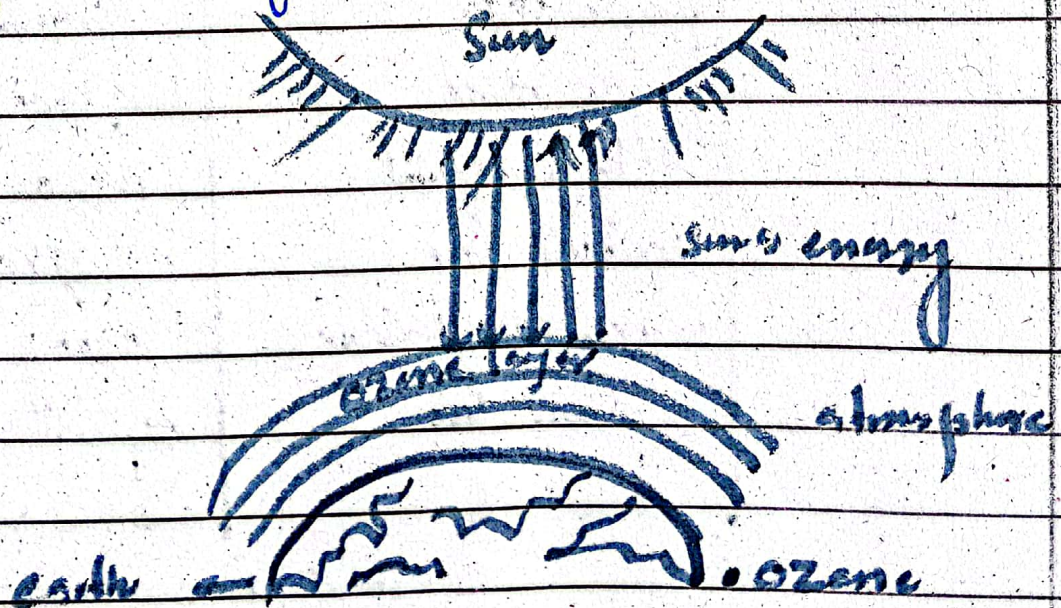
Qc What do you mean by ozone depletion and how can we prevent that?

Answer

Ozone

"Ozone is a gas of three oxygens."

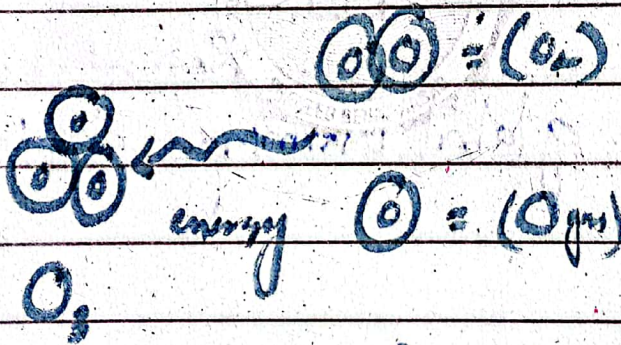
Ozone is a gas. It is composed of three oxygen atoms. Moreover, it is also called a blanket of the atmosphere. Therefore, ozone is a protective shield that protects from harmful radiations.



Depletion of ozone

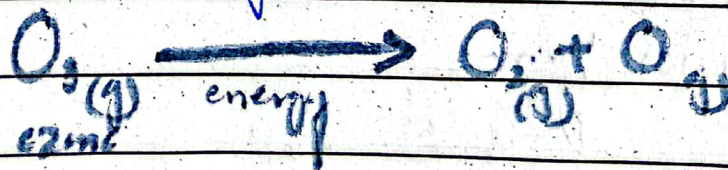
"Destruction of the nature of ozone layer, is known as ozone depletion."

Ozone depletion is the destruction of ozone layer. In fact, chloroform destroys capacity of ozone layer. CFCs , methylchloroform, carbon tetrachloride, and HCFCs.



Depletion of ozone

Mathematically,



Thus, ozone depletion is the break-

age of ozone layer.

Measures to prevent ozone depletion

Following are
measures:

i) Controlling global warming

Global warming needs to be curtailed.

"Global warming is a major cause of ozone depletion."

(The World Air Quality Report, 2000)

Therefore, global warming should be controlled.

ii) Reduce use of electronic appliances
Moreover, electronic appliances are major emitters of chloroform.

About 57% of chloroform comes from abundant use of electronic appliances,

ozone depletion"

(-WMO, 2011)

Thus, use of electronic appliances should be curtailed.

(ii) Suppression deforestation

Further, deforestation also causes ozone depletion. In fact, world's carbon cycle process is disturbed.

"About 17% of deforestation

leads to ozone

capacity affected."

(-The World Climate

Air Report, 2002)

Therefore, negates massive deforestation.

Qd) Discuss the different renewable energy resources.

Renewable energy

'Natural energy generation

From as renewable energy resources."

Renewable energy is a natural process. In fact, energy is generated from natural sources including solar, wind, and hydal. Moreover, renewable energy resources can be reused. Thus, renewable energy is a clean energy form.

Sources of renewable energy

Following are

Sources:

i) Wind energy

Wind is a potential source of renewable energy. In fact, adequate amount of energy can be generated from wind.

• About 3,000 of megawatt energy is produced from wind sources in South and Baluchistan."

(- Economic Survey, 2011)
 Thus, wind is a potential source of renewable energy.

ii) Solar energy

Along with wind, solar energy is also renewable energy.

“About 9000 MWh of renewable energy is produced by solar panels in Belgium.”

(- Economic Survey, 2011)
 Hence, solar energy is also renewable energy resource.

iii) Hydel energy

Further, hydel energy is a chief source of renewable energy.

“Pakistan has potential to generate maximum energy from hydel source.”

(The UNs - 2023)

Therefore, hydal is also renewable energy source.

(v) Biogas energy

Biogas energy is also a renewable energy source. In fact, wastes of animals are also useful in renewable energy generation.

"Pakistan can generate about 5,000 MW of renewable energy by utilizing biofuels."

(-At-Jzeers, 2009)

Thus, biogas energy is also renewable energy source.

