

General Science and Ability Past paper Questions 2016)

Q. 2(a) What were the main objectives of Clean Development Mechanism? Also explain the reasons for the criticism on Kyoto Protocol by the developed countries?

Ans. Main objectives of the Clean Development Mechanism

The Clean Development Mechanism (CDM) was established under the Kyoto Protocol (1997) to help developed countries meet their greenhouse gas reduction targets while promoting sustainable development. Its main objectives were

1, Facilitating Cost-Effective Emission Reductions.

Developed countries could invest in emission-reducing projects in developing nations instead of taking expensive domestic actions.

2, Promoting Sustainable development.

CDM projects aimed to support renewable energy, energy efficiency, waste management and other eco-friendly initiatives in developing nations.

3, Global Co-operation on Climate Change.

It is designed to foster international collaboration in tackling climate change while ensuring economic growth.

4. Creating a Carbon Market.

It introduced Certified Emission Reduction (CERs), a form of carbon credits that could be traded, providing economic incentives for emission reduction.

Criticism of the Kyoto Protocol by Developed Countries.

1. Exemptions of Developing Nations.

Major economies like China and India, which had rapidly growing emissions, were not required to cut emissions under the protocol, while developed nations had legally binding targets.

2. Ineffective CDM -

Many CDM projects were criticized for not leading to real, additional emissions reductions and for being exploited as loopholes by corporations.

3. Economic Disadvantages.

Developed countries like U.S., argued that Kyoto placed an unfair economic burden on industries, making them less competitive compared to countries without binding targets.

4. Limited participation. at the time)

The U.S. (the largest emitter ~~at that~~ never ratified the agreement, other countries like Canada later withdrew, reducing the protocol's  overall impact

Due to these criticisms, the Paris Agreement eventually replaced Kyoto protocol, adopting a more inclusive and flexible approach where all countries set their own climate goals.

2016

Q NO 7. (a) What is Tsunami? How the tsunami is generated and what are their characteristics.

Ans. 1. Definition of Tsunami.

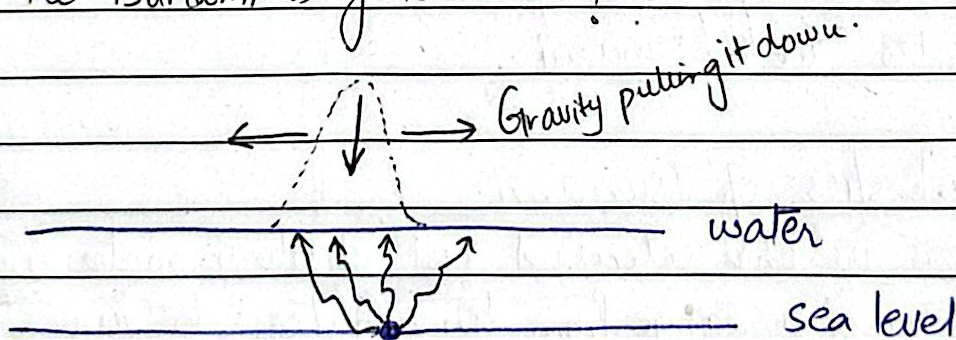
Tsunami is a Japanese word where:

- "Tsu" means harbour
- "Nami" means wave.

It refers to harbor waves caused by under water disturbances such as earthquakes, volcanic eruptions or landslides.

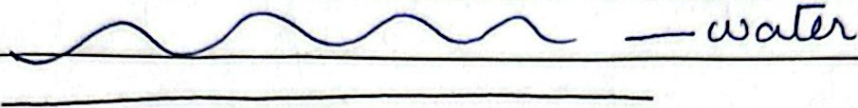
2. How the tsunami is generated?

(i)



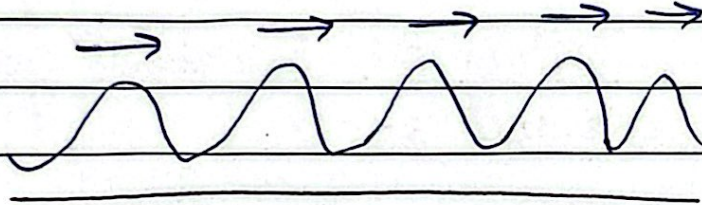
Firstly there is release of energy and an increase in amplitude of waves.

(ii)



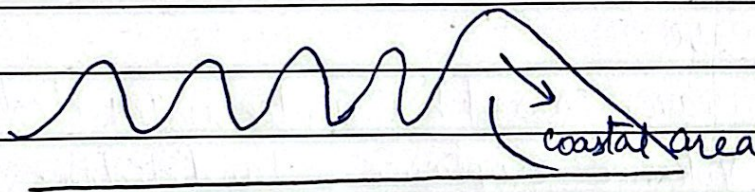
(ii) Secondly, splitting of amplitude of water under the actions of gravity

(iii)



Thirdly, the transference of energy and propagation of waves occurs.

(iv)



Lastly, the transference of waves to the coastal areas generates the Tsunami.

Characteristics of Tsunami.

Tsunamis are characterized as shallow-water waves.

A tsunami can range from ten minutes to two hours and a wave length in excess of 300 km miles (500km)

It has multiple waves and cause massive destruction at coastal areas, destroying infrastructure and causing high casualties.

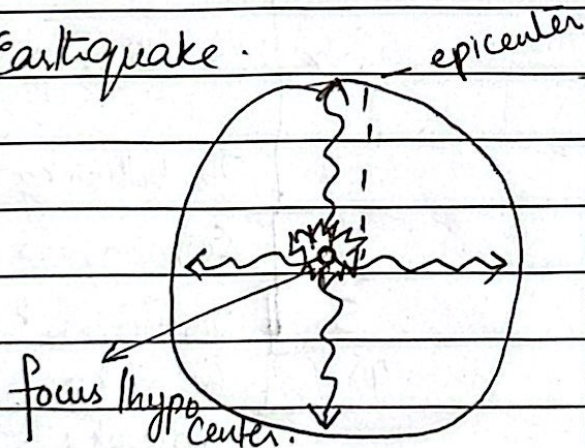
Q. No 7b. What is an earthquake? Discuss Richter Scale in this context. What was the intensity of the earthquake in Pakistan dated 26 October 2015 and where was the locus?

Answer.

Earthquake:

An earthquake is a sudden energy release in the form of seismic waves that creates strong vibrations and makes the earth's surface completely rugged. The waves causes the earth's crust to into large pieces, and the surface of the earth suddenly slips.

Anatomy of Earthquake.



Epicenter - Surface directly above the hypocenter

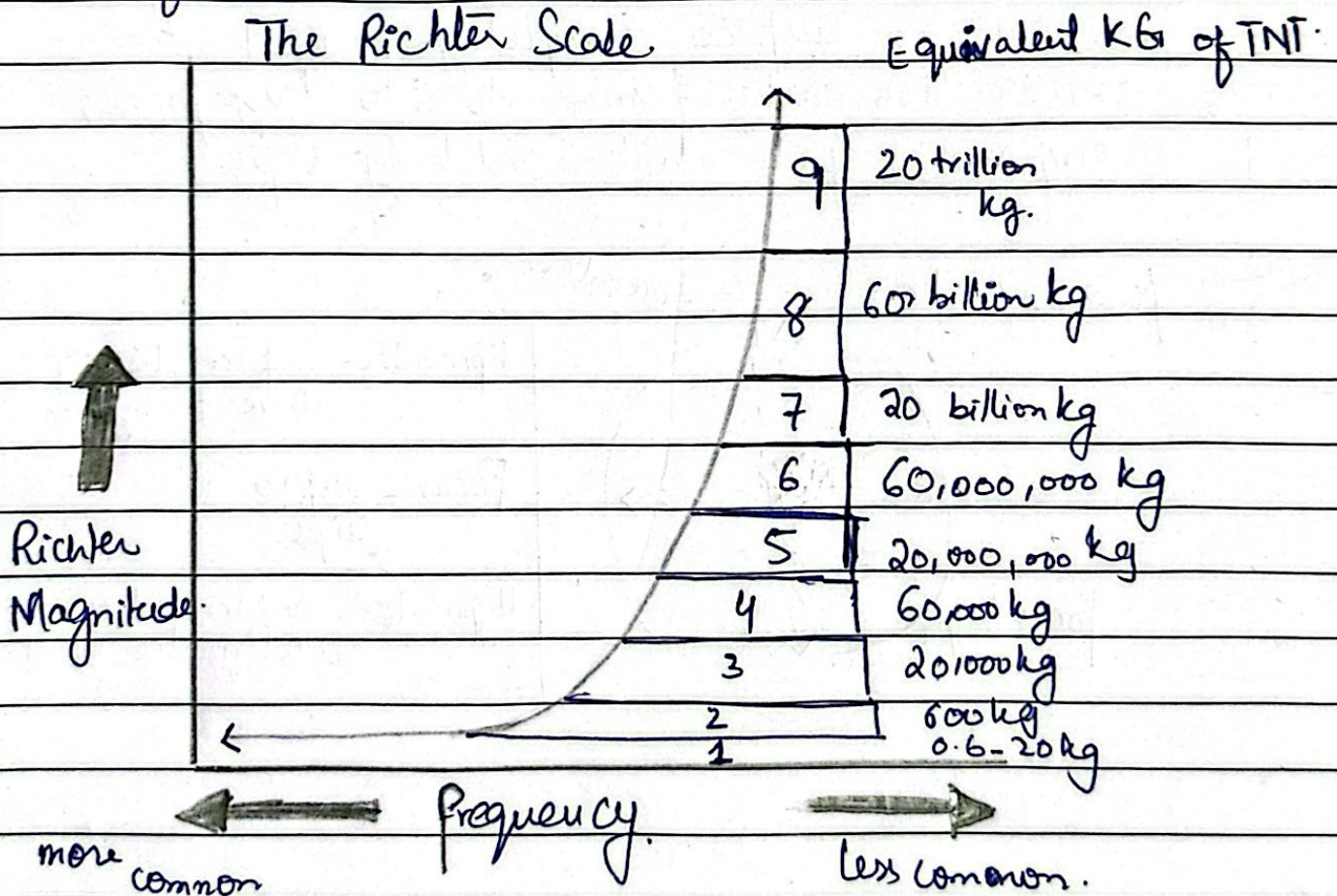
Focus - surface where earth slips

Hypocenter - surface where earthquake starts

Richter Scale.

Richter scale is a scale that was originally used to measure the magnitude of earthquakes ranging from 0 to 10 on the basis of the size of seismograph oscillations.

The number - from one to ten - is ascertained and calculated with the help of information that is gathered by a seismograph. It is basically used to indicate the intensity of an earthquake and how intense the earthquake was.



Intensity and locus of the earthquake happened on 26 October 2015.

a. Intensity.

According to the Pakistan Meteorological Department, the earthquake that shook Afghanistan, Pakistan and parts of India at 2:09 PM. Pakistan time on 26 October 2015 is measured at 8.1 on the Richter Scale.

b. Locus.

The epicenter of massive quake originated around 150 miles below the earth's surface located in the mountains of Hindu Kush in the Badakshan - Province of Afghanistan.