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Q. What is tsunami? How the tsunamis generated and what are their characteristics? Is tsunami and tide waves different?

Ans: Tsunami is a Japanese word which

- "TSU" mean harbor, name mean waves "Harbor waves"
- It is a series of ^{oceanic} wave with extremely ^{long} high wavelength and high energy, which cause large scale disturbance of ocean such as underwater earthquake, volcanic eruption, and landsliding.
- These waves travel across entire ocean and reach at coastal area cause widespread ~~widenspread~~ devastating flood.

How tsunamis generated?

1) Under water Earthquakes.

Majority of waves are generated by underwater earthquake. These are associated with movement of tectonic plates. When tectonic plates shift it displaced water and generate tsunami.

2) Submarine volcanic Eruption:

Submarine volcanic eruption occurs beneath the ocean which displace water and generate tsunami. When magma rises to its surface, it can create an explosive event that shifts the surrounding water and creates waves.



Underwater landsliding:

Occur beneath the ocean, where cause tectonic activity, volcanic activity or other factors which result rapid displace of large volume water.

Sudden movement can create ~~tsunami~~ ^{Tsunami}.

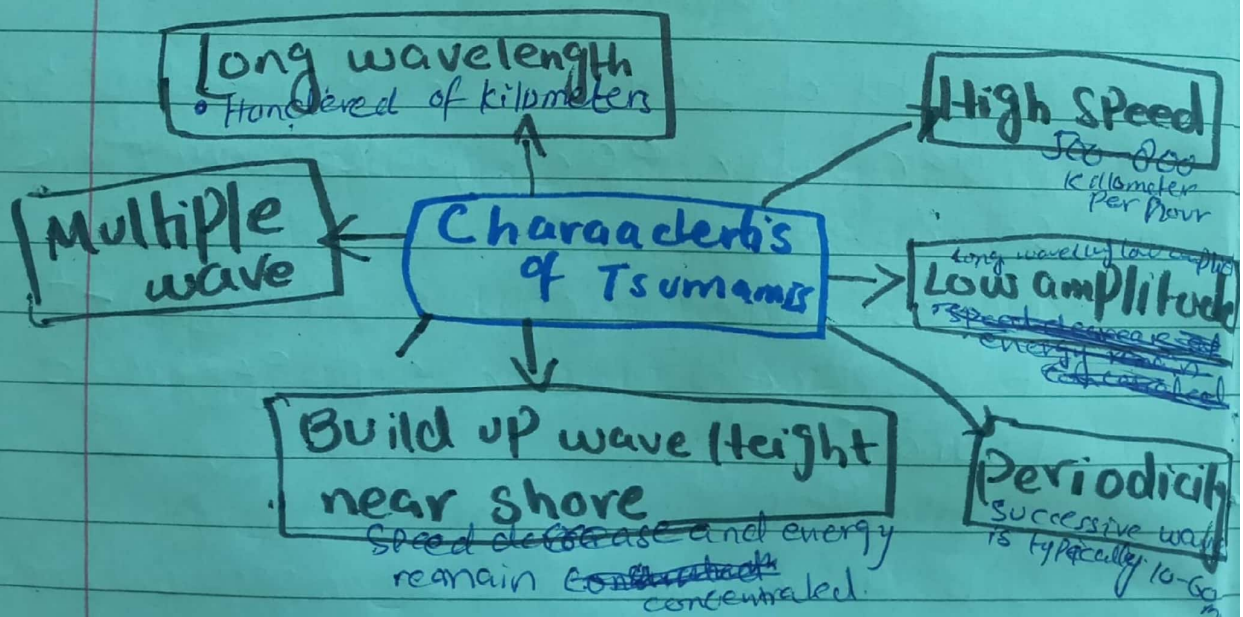
Meteorite impact:

In rare cause, the impact of large meteorite and asteroid into the ocean can generate waves. Impact displace water and create wave that propagate into ocean.

Nuclear Test / Explosion.

As it is not a natural cause, underwater nuclear test have a potential to displace water and generate tsunami.

Characteristics of tsunamis:





Difference of Tsunami and tidal waves:

Tsunami:

Caused by under water earthquake, volcanic activities and landsliding.

Series of waves with long wavelength and high speed.

~~They~~ Travel across entire ocean and may ^{reach coasted areas} produce devastating effect.

Tidal waves:

Tidal wave associated with pull of moon and sun gravitational force and cause by rise and fall ^{b/w} of earth and oceanic tides.

Q.2: Deficiency of vitamins cause different human diseases some of which given in the table below choose the correct type of vitamin:

Diseases	Name of Vitamin
1) Poor night vision	Vitamin A
2) Bleeding gums	vit C
3) Rickets in children	vit D
4) Beri-Beri	vit B ₁
5) Anaemia	vit B ₆ , K

Q.3: What are Pesticides? Explain their types; why persistent pesticides are more lethal for mankind?

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Pesticides:



- Pesticides are chemical substances used to control, repel, or kill pests.
- Pests can include insects, weeds, fungi, rodents and other organisms that adversely affect agriculture, public health, or the environment.

Types:

- Based on types of pests they kill
- Based on Biodegradability
- Based on chemical form
- Based on types of pests they kill
- Insecticides → insects
- Herbicides → weeds plant
- Fungicides → fungal infection
- Bactericides → ~~rats~~ bacteria
- Rodenticides → rodent / mice / rats
- Virucides → viruses.
- Based on Biodegradability:

Biodegradable Pesticides:

Those which can be broken down by microbes and living beings.

Non-Biodegradable Pesticides:

• Those which take months or years to break down.

Based on chemical form:

Organophosphate — effect on nerve system

Carbamate — "

Organochlorine insecticides — DDT (banned in market)

Pyrethroid → natural Pyrethrin — natural present in flowers

Sulfonylurea - herbicides → weeds

Biopesticides → naturally derive from animal, plant, bacterial & mineral

Hazards of Pesticides:

- Exposure to high levels of Pesticides can cause acute poisoning. (is may head abuse after long)
- Prolonged exposure to low levels of Pesticides may be associated with chronic health effects, including reproductive and developmental issues.
- Workers involved in the production, application or handling of Pesticides face occupational hazards.
- Pesticides can bioaccumulate in the tissue of an organism, leading to high concentrations as they move up the food chain.



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Q.24) Why the excessive use of chemical fertilizers should be avoided?

Ans. A fertilizer is any material that is applied to soil or plant tissues to supply one or more plant nutrient essential to the growth of plants.

- **Effect of fertilizers on water.**

The primary cause of serious oxygen depletion in many parts of oceans especially in coastal zones, lakes and rivers.

- **Effects of fertilizer on soil.**

Nitrogen containing fertilizer caused soil acidification when added. This may leads to decreases in nutrient availability which may be offset by liming.

- **Effect of fertilizer on atmosphere**

Through the increasing use of nitrogen fertilizer, which was used at a rate of about 110 million tons (of N)

per year in 2012, N_2O has become the third most important greenhouse gas after carbon dioxide and methane. These leads to global warming and ozone depletion.