

Date: _____

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Question No 03

(a)

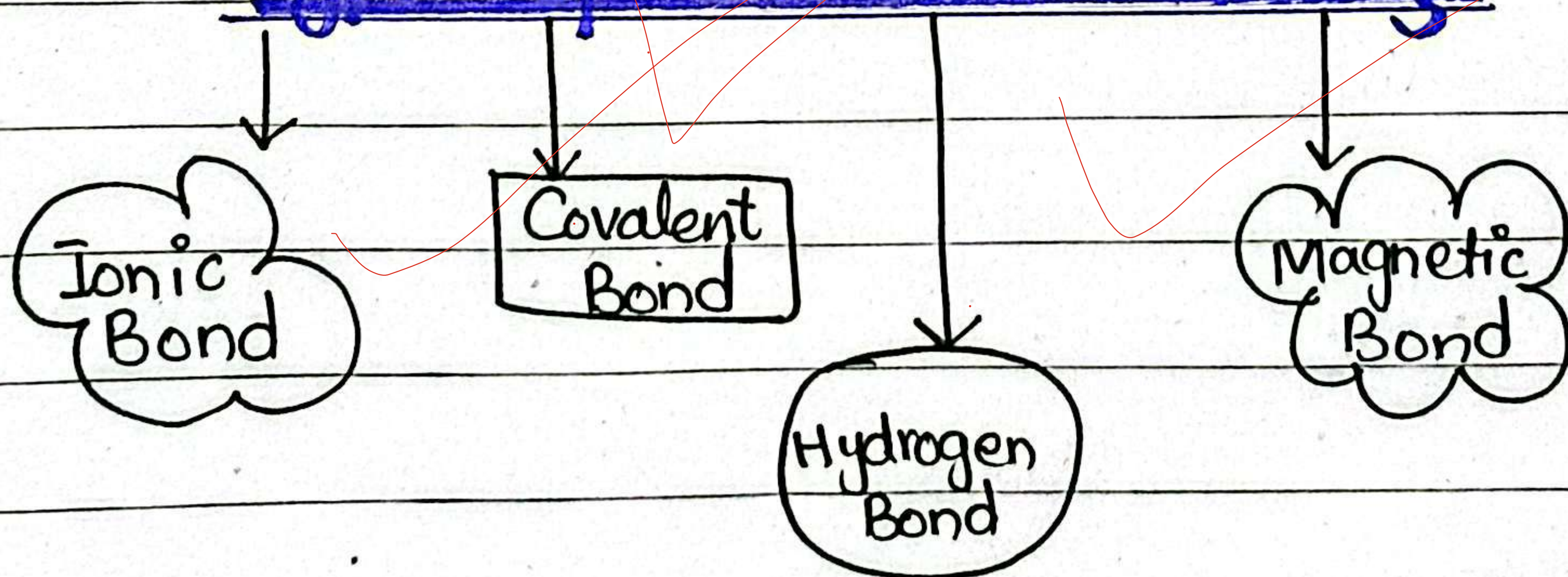
Chemical bonding:-

Chemical bonding is a form of attraction between different ions and atoms to make particular molecules. The attraction between atoms is due to opposite electromegnatic forces and charges.

→ Forms of Chemical bonds:-

Chemical bonding between different ions and atoms is done by sharing, gaining or losing electrons. It is necessary for the formation of different molecules.

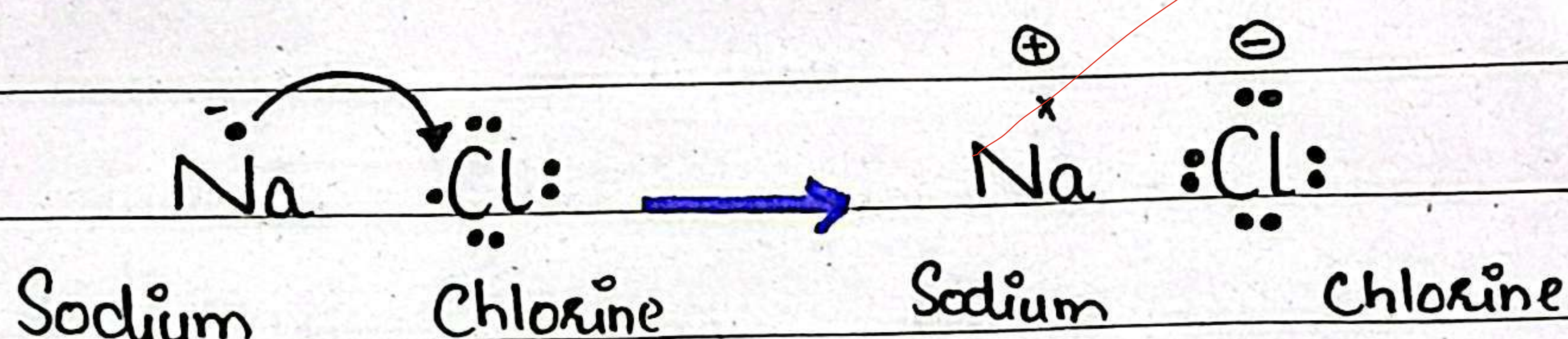
Types of Chemical Bonding



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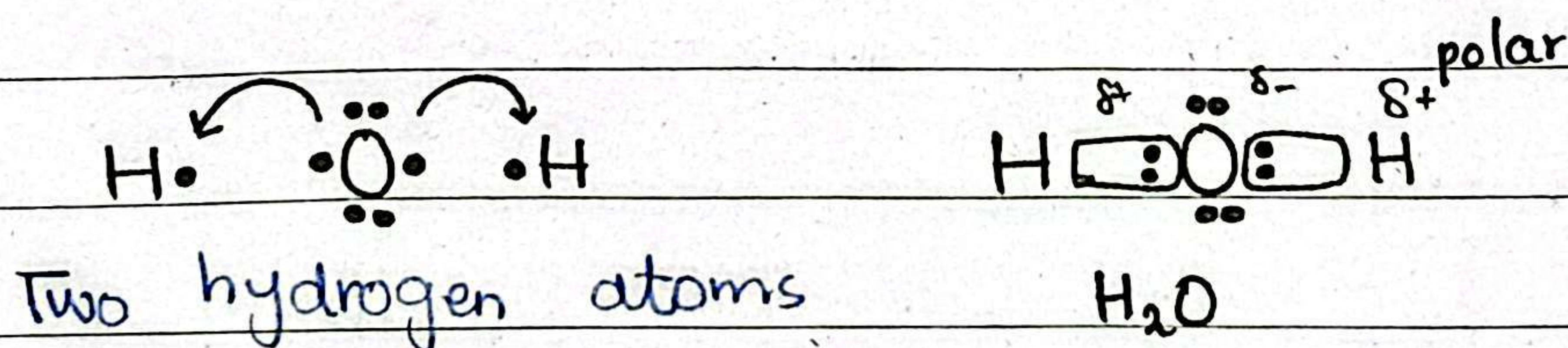
i) Ionic Bond:-

Ionic Bond is the form of chemical bonding in which one atom completely lose or gain electrons to full its outer shell.



ii) Covalent Bond:-

Covalent Bond is the type of chemical Bonding in which electrons are shared between two different atoms to make a complete molecule. Electrons are shared by strong electromagnetic forces.



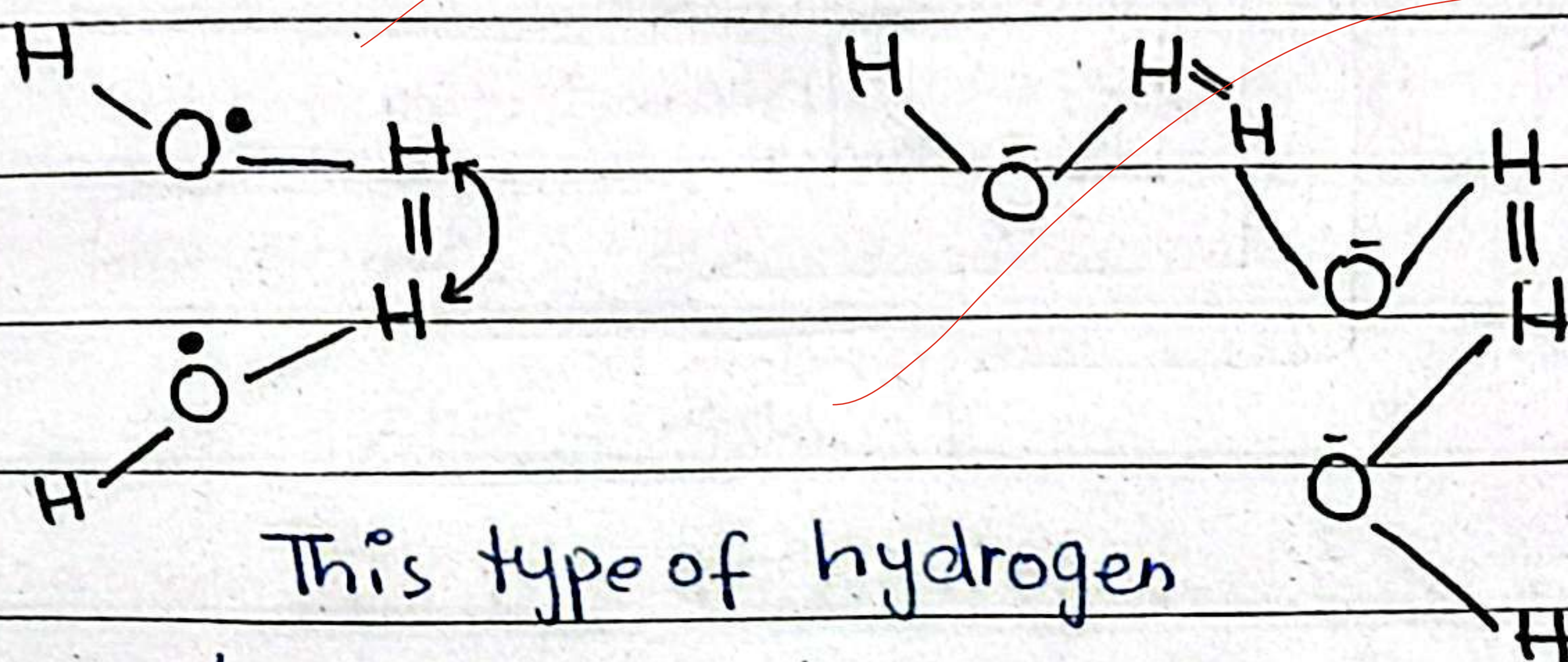
share their electrons with oxygen atom to form water molecule.

(iii) Hydrogen Bond:-

Hydrogen bond is the type of chemical bonding in which two or

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more than two hydrogen atoms make their attraction to form a stronger molecule.



This type of hydrogen bonds make stronger attraction and hold water molecules together.

Flood:-

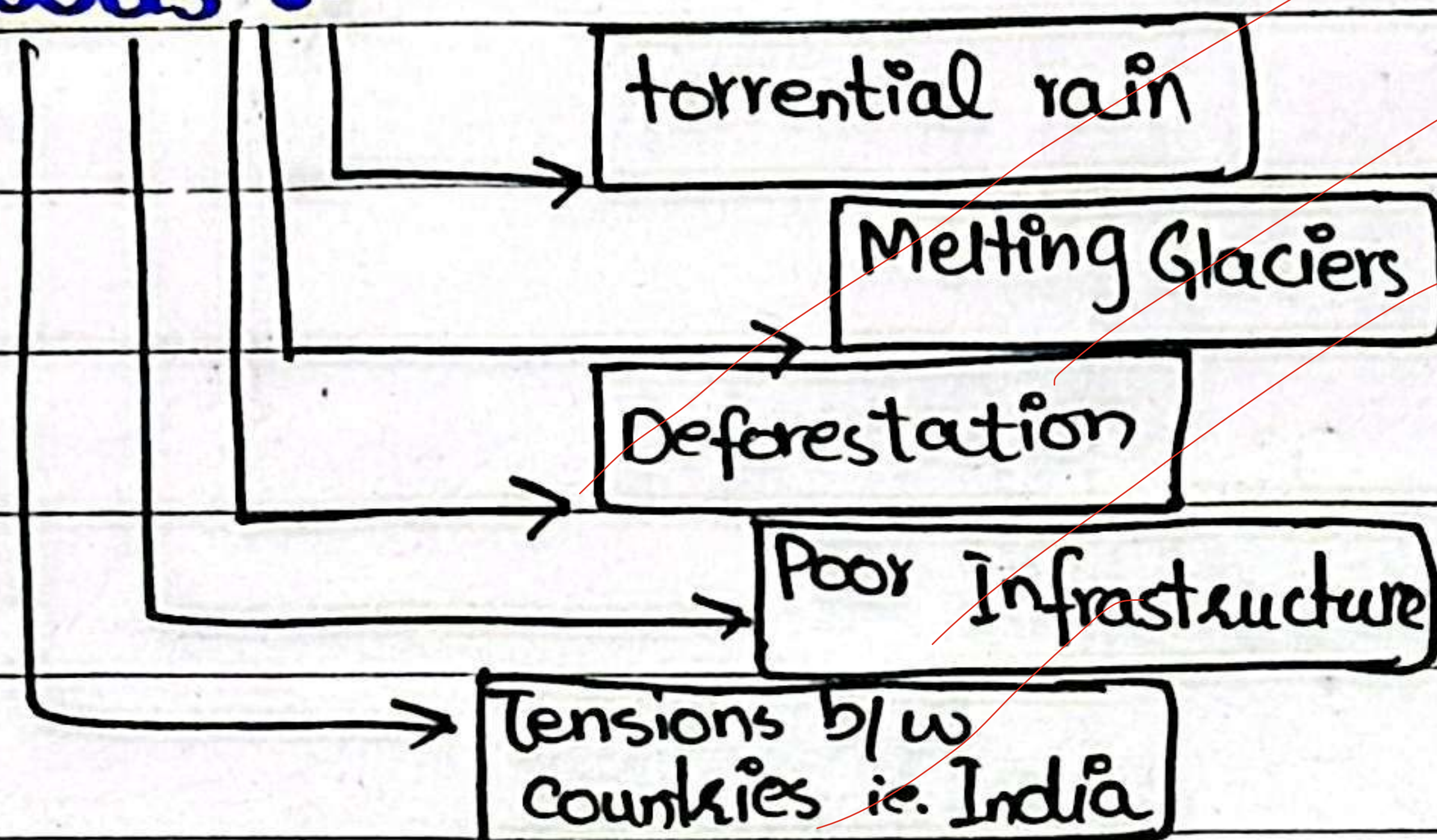
Flood is a disastrous form of natural hazards, in the form of excess water coming from rivers, streams and by rains.

Flood is the excess of water more than human needs which effects infrastructure, agriculture, and human lifes. at large scale.

Example is of recent flood 2025 which affects 20million peoples.

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What are the main causes of floods :-



i) Torrential rainfall:-

Excessive torrential rainfall in recent months causes the disastrous flood. There was a about **700mm** rainfall in 24 hours in sialkot and many other regions of country cause flood.

ii) Melting Glaciers:-

The most significant cause of the flood is melting glaciers rapidly. There is about **30%** of glaciers melt in recorded year 2025.

iii) Increased Deforestation:-

Forest are served as the lungs of the atmosphere which clean the air from Greenhouse Gases. However, increasing urbanization remove forest for their survival and contaminate the atmosphere.

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iv) Poor Infrastructure:-

Pakistan is a developing country has a poor infrastructure and ineffective policies to deal with the natural disasters. There is a lack of dams, canals, and barrages which control or store the water for future use.

v) Tensions with India is main cause of flood:-

Pakistan has ups and downs in relations with India since its independence. The suspension of Indus water treaty by India unilaterally and use of water as a war is the big cause of floods.

Reliable Suggestions to cope floods in Pakistan:-

The devastating floods in Pakistan affects the infrastructure, livestock, agriculture and the human lives. There are various suggestions to cope floods in Pakistan to reduce dependency on fossil fuels, enhance reforestation, improve infrastructure i.e. dams, canals, bridges and buildings. The floods

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can be reduced by ensuring disaster risk management and making good relations with other countries especially India. There is a need to implement pro-active policies to reduce the flood chances.

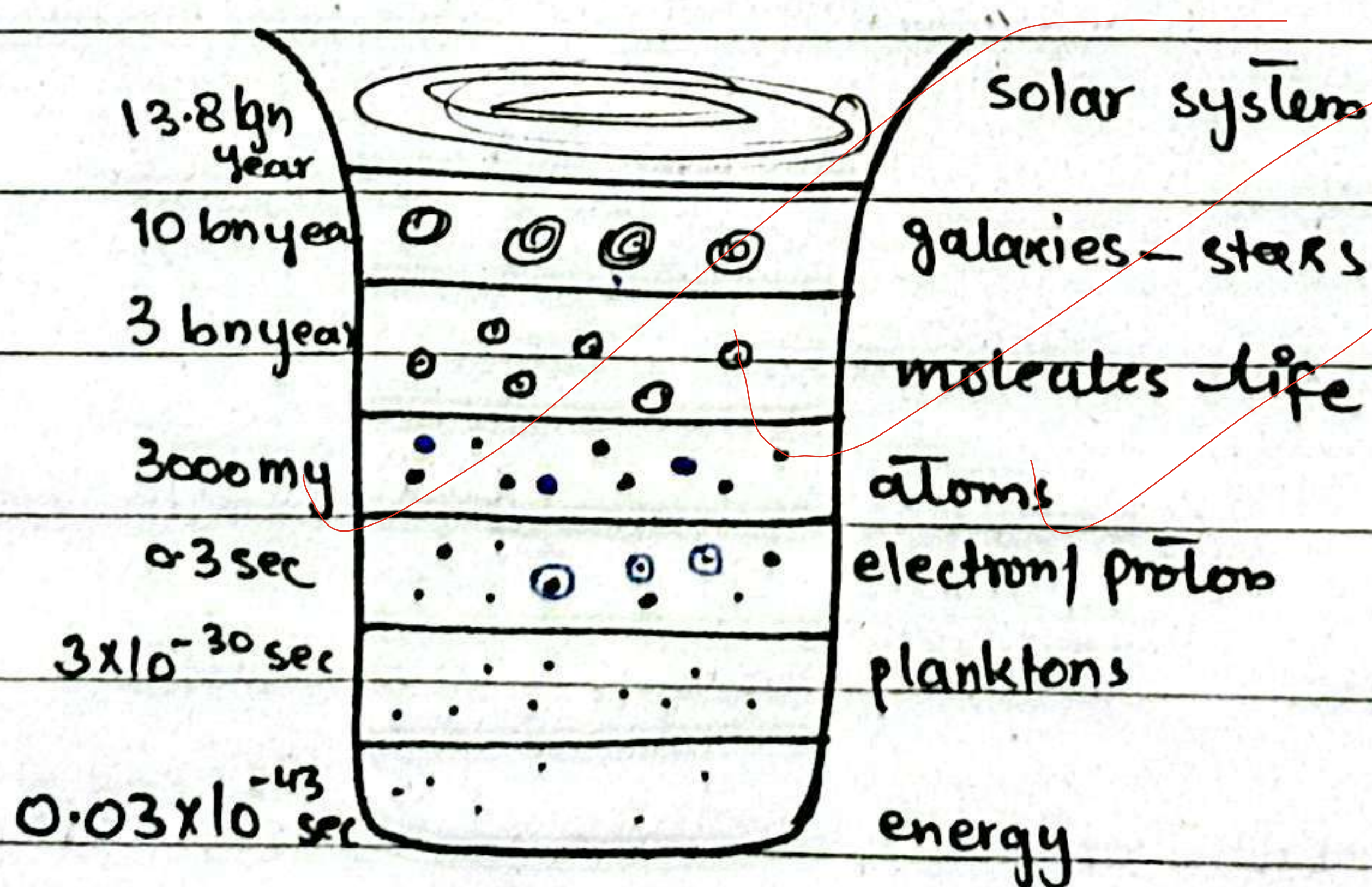
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• Qd •

Big Bang theory:-

Big Bang theory is the scientific theory which proves the formation of Earth and the origin of life approximately **13.8 bn years ago**. It proves that life started from a single pea like spot and expands into huge galaxies and solar systems with the rang of time.

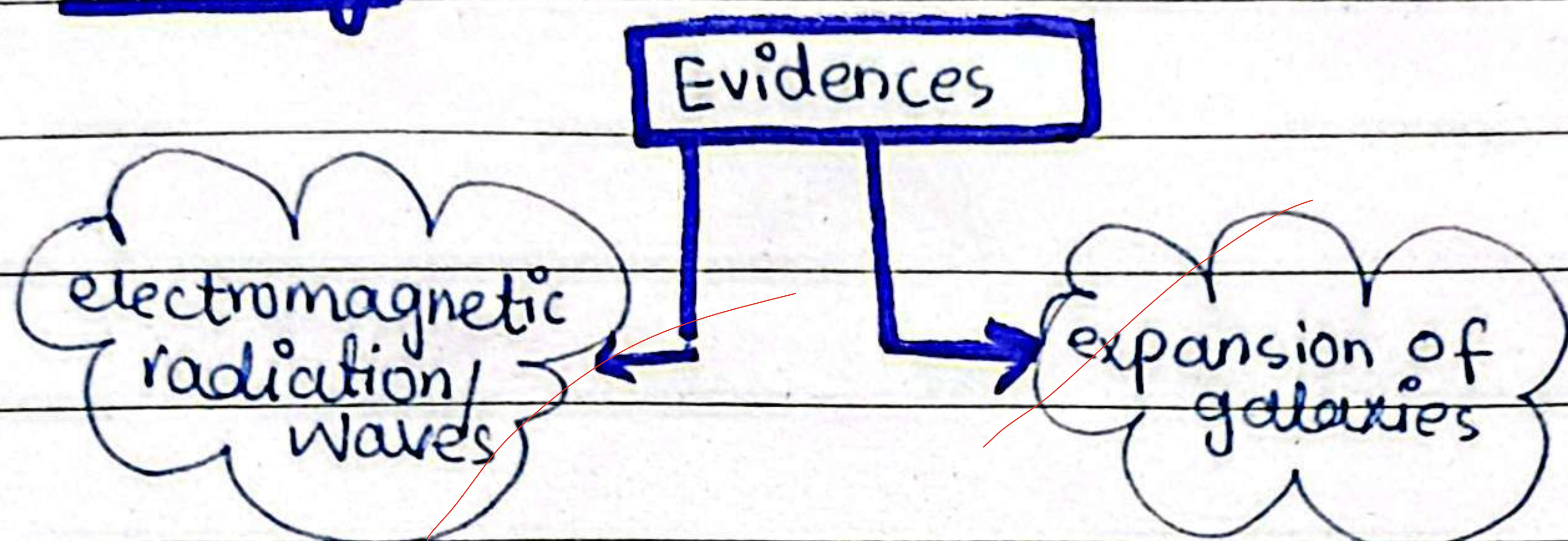
Chronological time of the formation of life according to Big Bang theory:-



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Evidences to support Big Bang

theory :-



Expansion of galaxies is the big evidence of Big Bang Theory where emission of "red rays" from the stars shows the Earth moving away from the galaxies. It shows the continuously expansion of life.

Background electromagnetic radiations :-

Electromagnetic radiations released from the objects present in Universe are observed by **William Powe** with his colleague during the experiment of radio waves. The background emission of electromagnetic radiation is the evidence of expanding universe continuously and support Big Bang theory.

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Question No #02

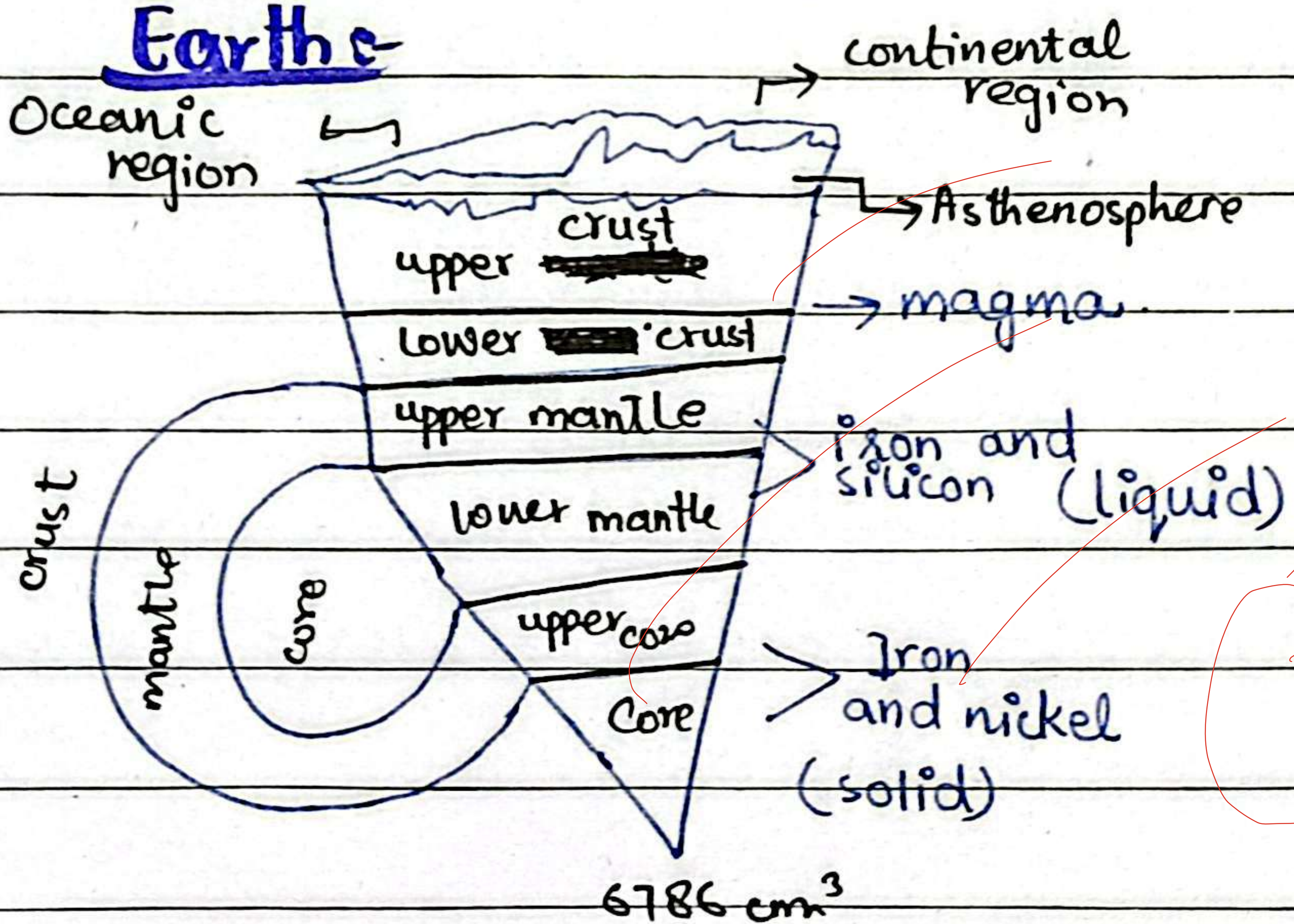
- a) b) -

Explain the internal structure of Earth-

Earth is the regular or irregular structure of oceans and continents with variable structure, function, and characteristics.

The internal structure of Earth consists of three main parts: Crust, Mantle and Core.

Internal structure of Earth-



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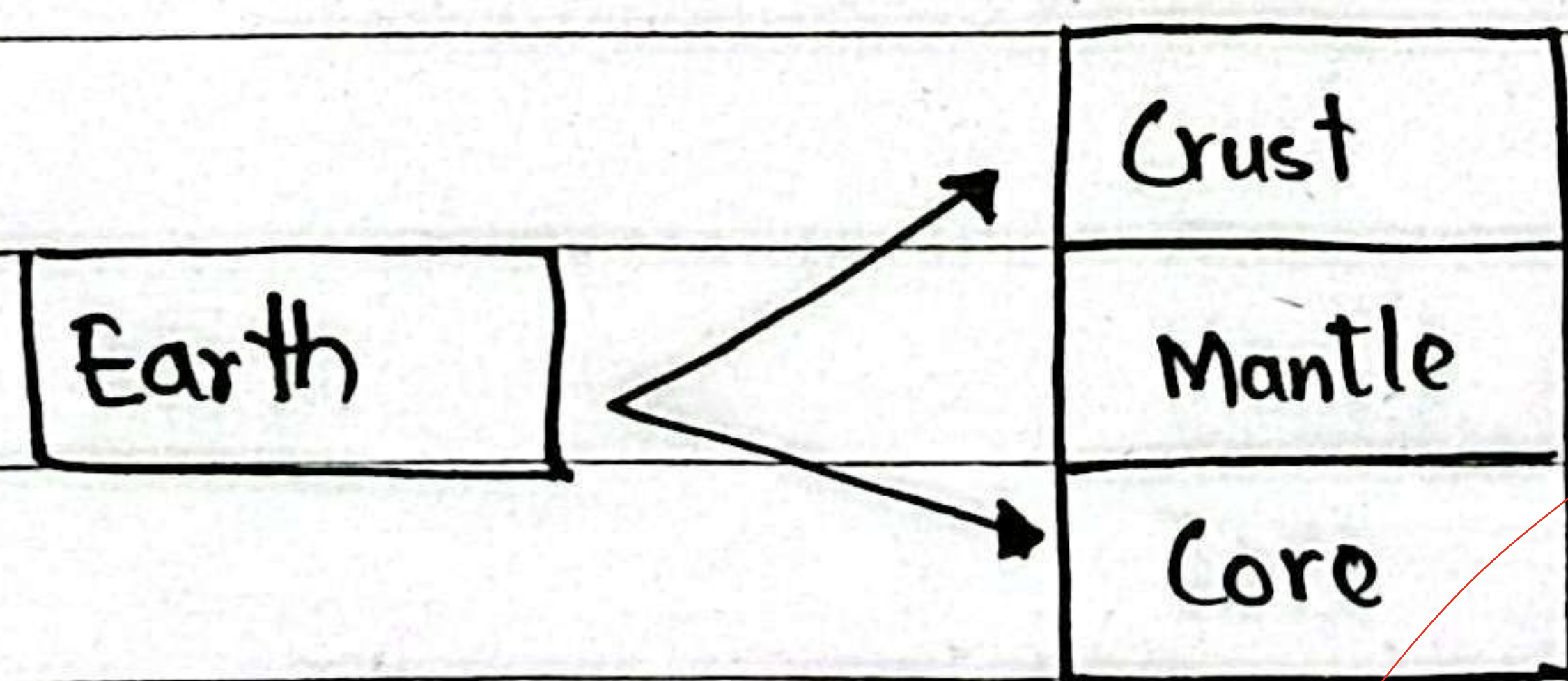
i) Crust:- Crust is upper most layer of the Earth which separate the inner Earth from atmosphere. It is about **500 km** deep inside the Earth. Asthenosphere and Lithosphere are the parts of crust.

ii) Mantle:-

Mantle is the inner structure of Earth below crust. Lithosphere separate the Crust from upper mantle and is liquid form. Magma is present in the mantle and comprise of **Iron, Nickel and Silicon**.

iii) Core:-

Core is the inner most portion of the Earth which is solid and made up of **Iron and Nickel**. Core spread around 6780 km downward to the Earth.



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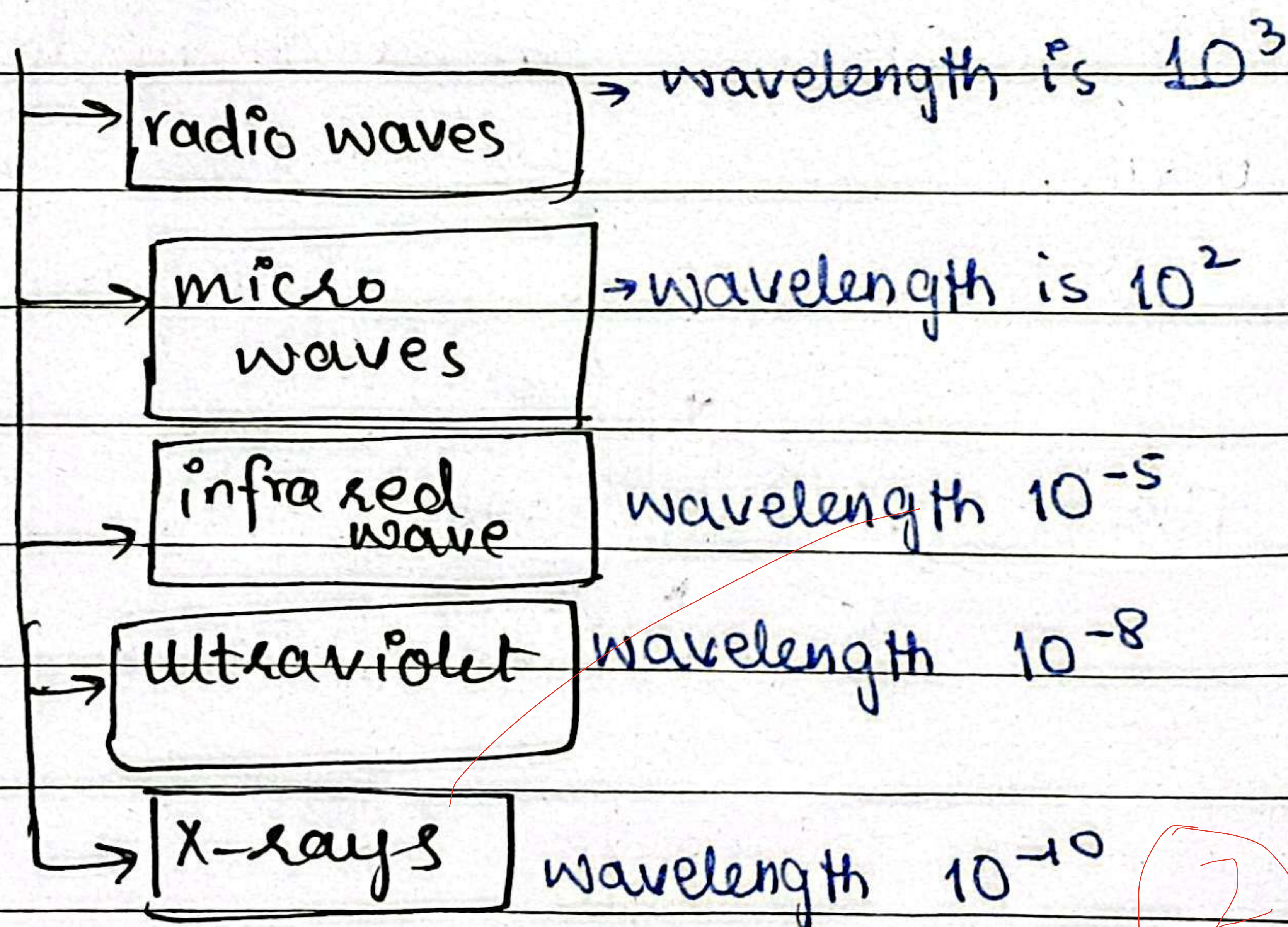
Electromagnetic Radiation:-

Electromagnetic radiation is the form of energy waves which travel with specific speed, wavelength and distance. Electromagnetic radiations are used to send different signals, information, and light.

Electromagnetic

Spectrum:- Electromagnetic spectrum is used as an instrument which differentiate waves according to their speed, and wavelength, intensity.

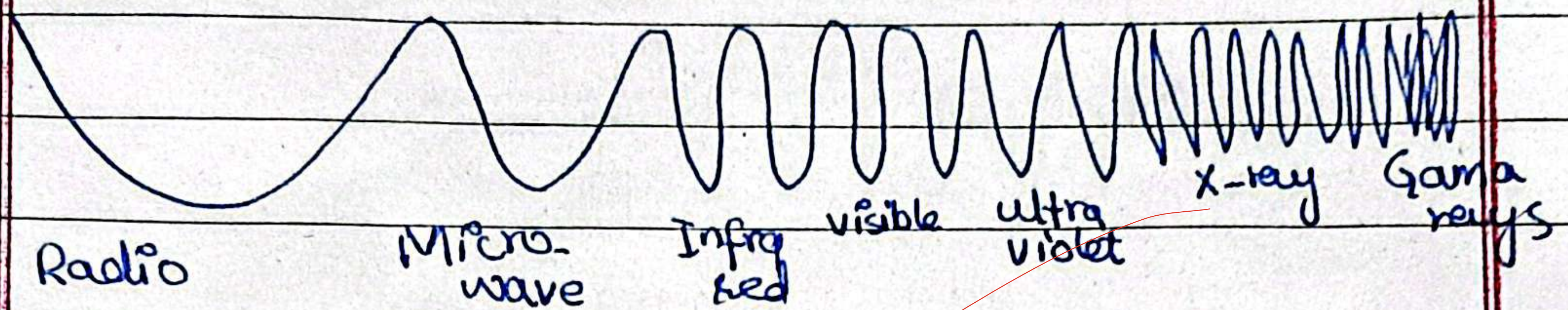
Types of electromagnetic radiation:-



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EM Spectrum.



The electromagnetic spectrum is the range of all frequencies of electromagnetic radiations.

