

Question: 03

(a)

Why atoms form chemical bonds?
Discuss covalent bond in water...

Chemical bond

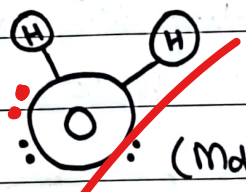
Chemical bond refers to the strong attraction force between the atoms or ions in the structure.

Octate Rule

For Example

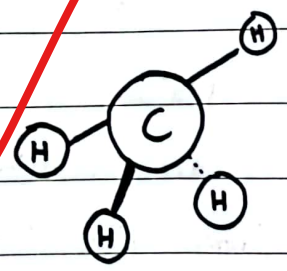
Water molecules included, 2 hydrogen and 1 Oxygen.

To complete the valance shell, $8e^-$ is $8e^-$.



(Molecular shape of water)

Another example is "Methane (CH₄)"

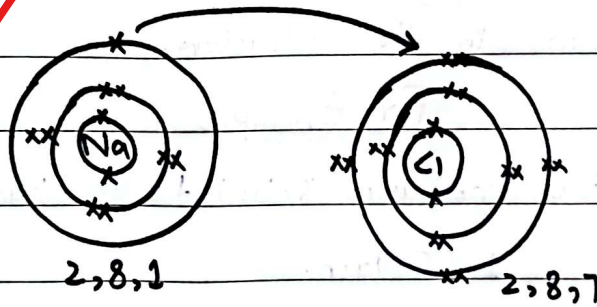


Why do atoms form bonds?

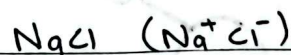
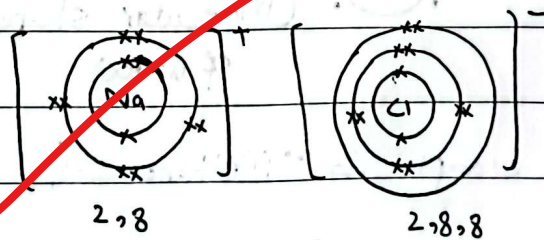
Atoms form the bond to make their outer shell stable.

For instance:

An ionic bond shares its electrons to another one to stabilize its outermost shell. Like NaCl



To stabilize $(Cl)^-$ Na will give its electron to the (Cl) .

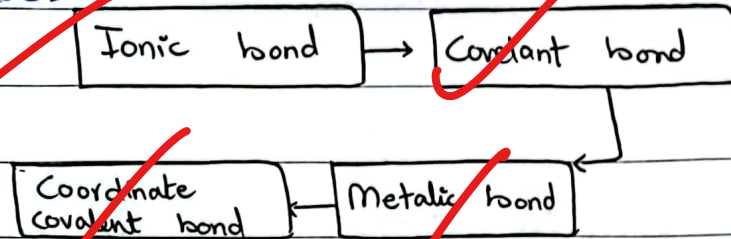


But some bonds are reluctant to donate their electrons like Noble gases.

Because their outermost shells are already completed and stable. For instance, Helium₂.

Types of chemical bond

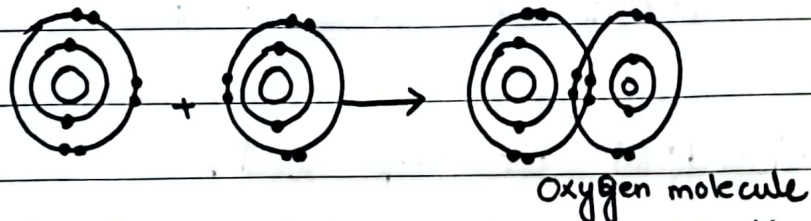
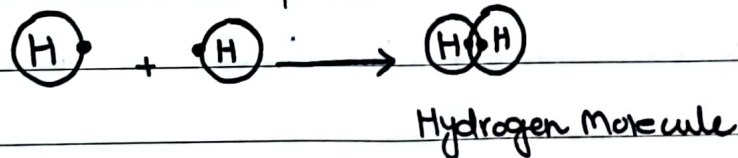
There are different types of chemical bonds.



Covalent Bond in water

When two non-metal atoms combine, they share one or more pairs of electrons with each other. That shared pair of electron is called covalent bond.

In case of water:

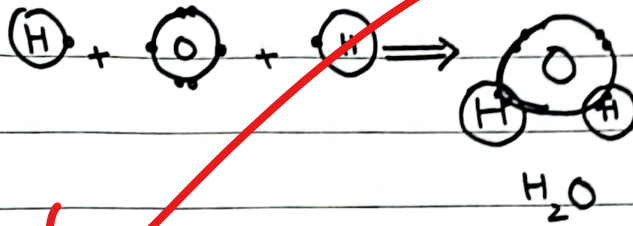


Now there will be electronic configuration of the hydrogen atom. Therefore two hydrogen atoms covalent bonding by sharing one electron to form a hydrogen molecule. Like the following picture:-

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Conclusion

(C)
Merits and demerits of global warming

Global Warming

The average increase in atmospheric temperature at an alarming rate due to the accumulation of green house gases is called global warming.

Global Temp (↑)
1.5°C

Merits of global warming

1. Beneficial for crop yield:

There are more crops need more sunlight to be ripened. For instance

- Okra
- ↓
- Peppers
- ↓
- Cucumbers

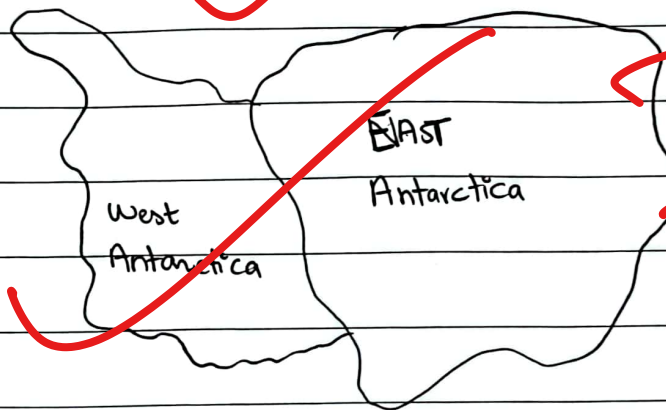
Hot weather



2. Beneficial for cold areas

The coldest areas of the world;

For example, East Antarctica and West Antarctica having temperatures about -93°C need sunshine. It could be beneficial for these continents.

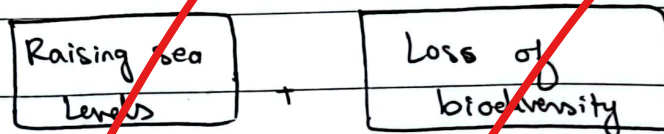


But this may cause melting of glaciers

3. Maximum heat can prevent the diseases

There are many diseases which are raised in cold seasons like COVID-19 and have minimum affect in the warm seasons.

Merits:



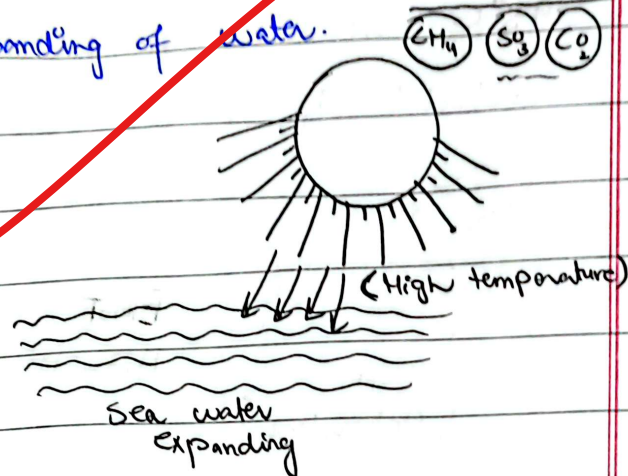
Impact on agriculture

+

Extreme weather

1. Rising sea level

Due to large number of green house gases in the atmosphere, it enhances the temperature and results towards expanding of water.

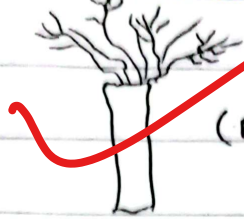


2. Loss of biodiversity:

This heat also leads towards the loss of biodiversity. The reason in the forests is that animals die due to droughts; as they do not get water. Moreover trees (that) which are the inhabitants of many animals and birds are destroyed. And present the picture

draught

like an autumnal trees before autumn.



(A tree affected by the heat-wave)

3. Impact on agriculture

The global warming also affects the agriculture. The vegetables or fruits that need less heat, are scorched by the global warming.

In Pakistan agriculture already is taking part in 21% of its GDP. It will (take *in) bring effect due to global warming and heat-waves.

Conclusion

Hence, there are merits of global warming but unfortunately, it has maximum demerits, that is needed to be combated throughout the world.

(d)

Polio and challenges in eradication of polio in Pakistan

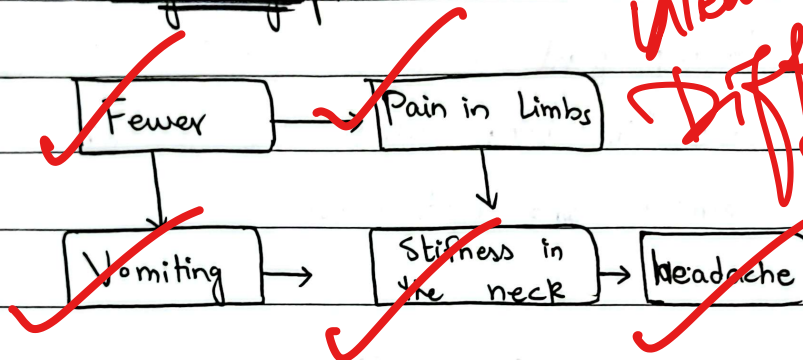
Polio

Polio is a viral disease that affects usually children till 5-6 years of age.

low BP

What happens in this disease:

• Early Symptoms:



Weakness, Difficulty in handling etc

• Late Symptoms

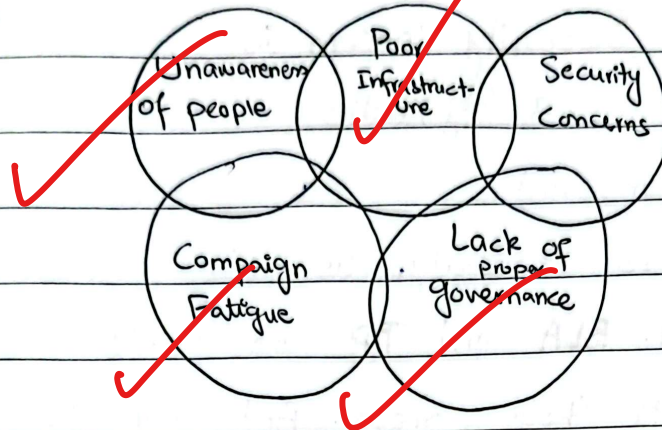
Late symptoms are more dangerous than the early one.

Paralysis → in legs

↳ 5-10% children die

due to mobilization of their breathing muscles

Challenges to eradicate the problem in Pakistan



1- Lack of awareness of people

People feel hesitation in some areas especially remote areas. They feel it will affect the health of their children.

Especially they are so much concerned about their problems related to eggs and

sperms in the future. They claim that:

(They would not be able to give birth to their children)

fertility

2- Poor infrastructure in different areas of PAKISTAN

There are some areas like the deserted areas or Balochistan that give minimum access due to low

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infrastructure. That can leads towards many problems like accidents.

3- Security concern is a big hurdle

Balochistan and KPK are famous of less security, due to political instability. BLA and TTP are mostly found in these areas. And they attack the people any time. For examples

"In January 2016, 16 Polio workers died in a suicide attack in Quetta, including 6 female workers."

(A case study)

4- Lack of poor governance

Government also do not take care of these problems. Pakistan's most of the economy is aid based. That is the reason, the government is unable to take care of all concerns.

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Conclusion

Polio is one of the most highlighted issues in Pakistan that is facing challenges for many years. If these problems do not resolved, it will ^{unresolved} uprise to many challenges in the country.

Add chart & figures for ^{it} ~~good~~ ^{makbil} good.