

Q a) Define chemical bonding.  
Also describe ionic and covalent bonds.

Answer

### Chemical Bonding

"Chemical bonding is a force of attraction in which particles of atoms are strongly held together."

For example: ionic bonding, covalent bonding, ionic bonding, metallic bonding, and hydrogen bonding.

bond in an atom of hydrogen

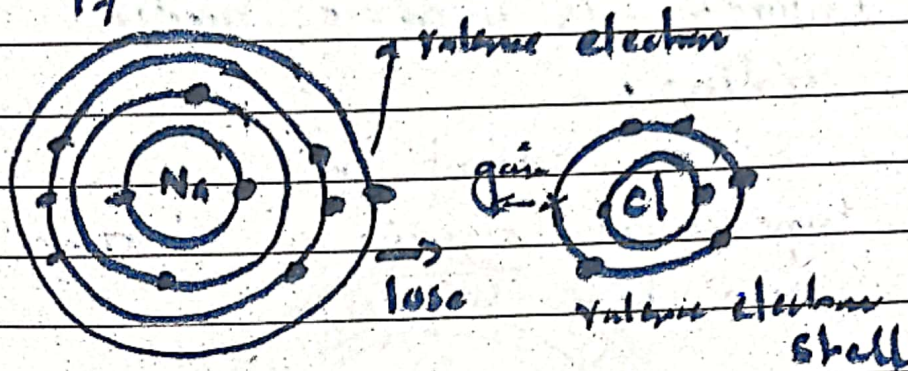
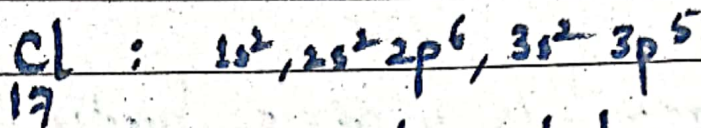
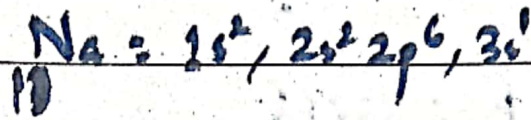


a) Ionic Bonding

A bond is formed by complete transfer of electrons from one atom to another atom.

"Ionic bond is formed by loss and gain of two atoms."

For example: NaCl



Thus, sodium will lose its valence electron and Cl will accept to complete its shell.

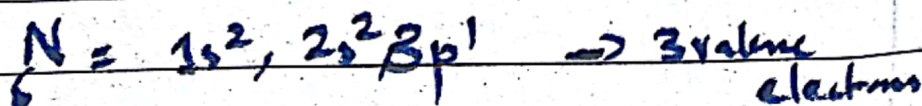
b) Covalent bonding

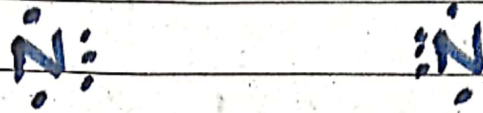
Covalent bonding is formed by sharing of electrons from both sides of an atom.

"Covalent bond is formed by share of electrons."

For example:

Nitrogen: Nitrogen bond





Nitrogen is a triple bonded covalent.

Therefore, covalent bond is formed by sharing of electrons from both sides.

Q b) Difference between solar and lunar eclipse

Answer 1- Solar Eclipse:

Solar eclipse is formed when moon comes in between earth and sun.

Hence, it is known as solar eclipse.

2- Lunar Eclipse:

Lunar eclipse occurs when earth comes in between moon and sun, hence known as lunar eclipse.

### 3. Difference between solar eclipse and lunar eclipse

Basic Comparison	Solar eclipse	Lunar eclipse
i) Meaning	An eclipse is formed due to disruption of moon.	An eclipse is formed due to disruption of earth.
ii) position	In solar eclipse, moon takes position.	In lunar eclipse, earth takes position.
iii) occurrence	Solar eclipse occurs during day.	Lunar eclipse occurs during night.
iv) frequency	Solar eclipse occurs every eighteen years twice.	Lunar eclipse occurs every eighteen months.
v) duration	Solar eclipse lasts for 5 to seven minutes.	Lunar eclipse occurs for an hour.

Q c) Difference between rotation and revolution

Answer a) Rotation

"Rotation is the movement of the earth around its own axis."

b) Revolution

"Revolution is also the movement of earth, but around the sun."

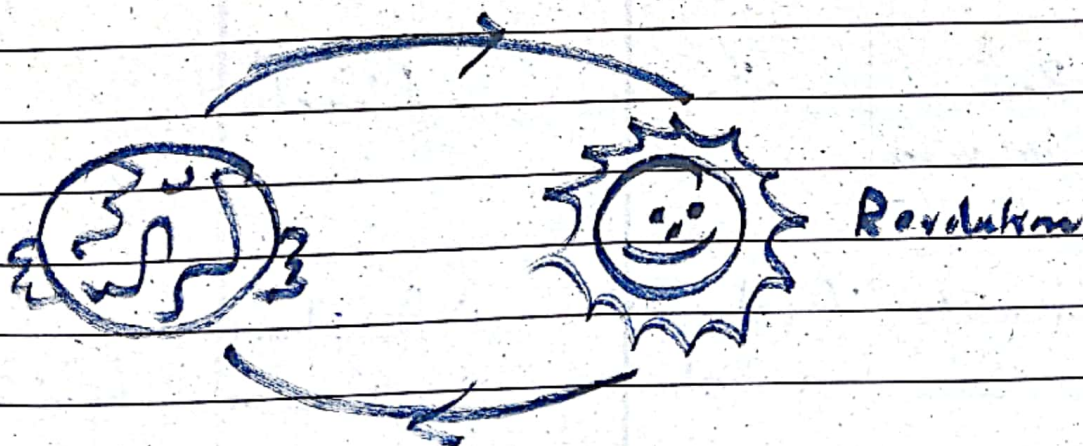
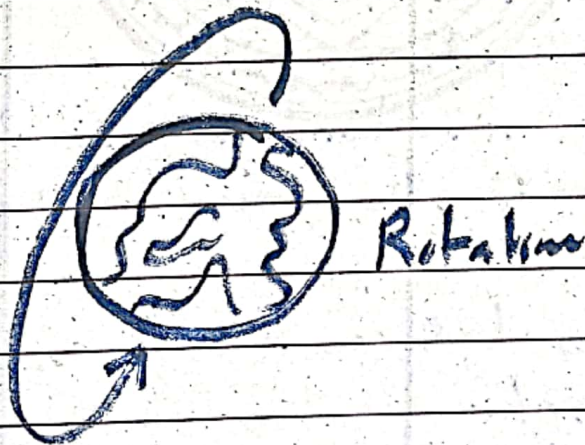
c) Difference between rotation and revolution

Basic Comparison	Rotation	Revolution
i) Meaning	When earth moves around its own axis, called rotation.	When earth moves around the sun, called revolution.
ii) movement	It is a spin movement.	It is a revolutionary movement.

iii) direction	It is an anticlockwise movement i.e. West to East.	It is a clockwise movement.
----------------	----------------------------------------------------	-----------------------------

iv) Duration	Rotation takes 23 hours 56 minutes, and 4 seconds.	Revolution completes in 365 days, 5 hours, 48 minutes, and 46 seconds.
--------------	----------------------------------------------------	------------------------------------------------------------------------

v) Affects	day and night dawn and dusk tidal affect	Seasons
------------	------------------------------------------------	---------



Qd) Difference between a star and a planet

Answer a) Star

"A star is a brilliant object with its own light. Hence, a star is a luminous object." →

e.g. the sun and protos

b) Planet

"A planet is a round object that does not produce own light.

In fact, a planet is a non-luminous object." →

e.g. the Earth and the Venus

c) Comparison between a star and a planet

Basic Comparison

Star

Planet

1) Meaning

A star is a shining

A planet is a round object

object with  
its own source  
of light.

having no  
own source of  
light.

ii) Light

A star produces  
own light  
through fusion  
reaction.

A planet never  
produces own  
light. Hence,  
no fusion reaction.

iii) Revolving  
objects

Objects revolve  
around star  
are such as  
the Earth and  
dwarf planets.

Objects that  
revolve around  
the planets  
are moons  
and satellites.

iv) Temperature

Temperature  
of star  
is about  
15 million °C.

The temperature  
on planets  
comes from  
the temperature  
of the star.

v) Examples

Examples of  
star are  
the sun and  
proton.

Examples of planets  
are the Earth,  
Venus, Neptune  
etc.