

33669 - UR005A - 053

## PART - II

Q: (a) Why atoms form chemical bonds? Discuss covalent bond in a water molecule.

### Chemical bonds

The process in which the atoms combine in order to get stability is called chemical bonding.

### Why atoms form chemical bond

There are few reasons due to which atoms form bonding with each other

a: Everything of universe wants stability.

b: atoms also gain stability involve themselves in chemical bonding.

c: If any atom possesses 2 or 8 electrons in its valence shell is called duplet rule.

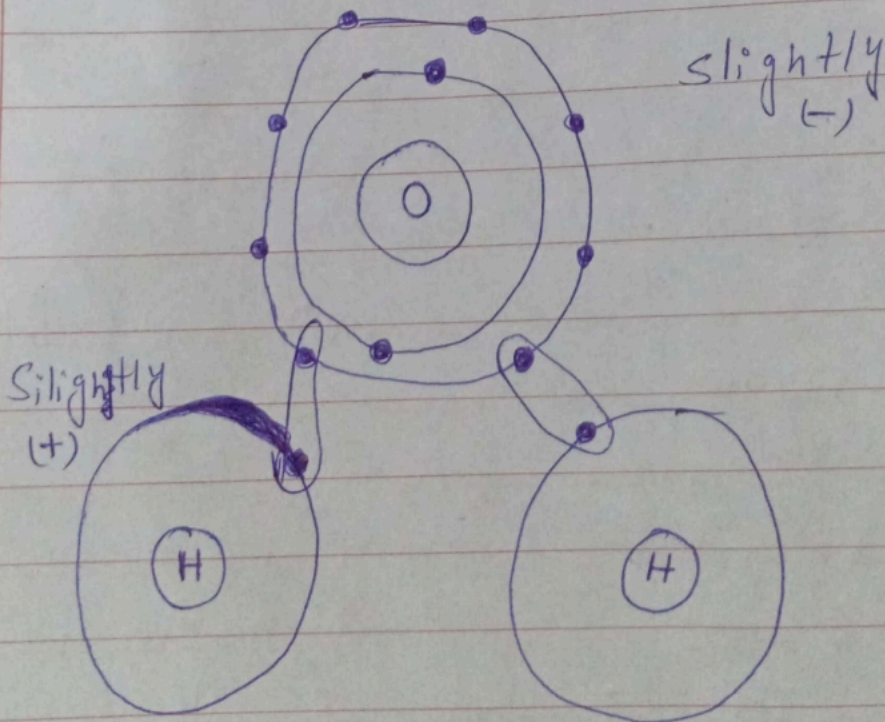
d: Obtaining electron to complete 2 electron in valence shell is called duplet rule

e: The tendency to gain 8 electrons in valence shell is called octet rule.

### Covalent bond:

Bond in which one or two/more pairs of electrons are shared by two atoms is covalent bond

Example water molecule



Water is polar due to uneven



- distribution of electrons between oxygen and hydrogen.
- b. what is Doping? Discuss different types of Ceramics.

## Doping.

Doping is the process of adding some impurities in a pure semi-conductor in order to increase its conductivity.

Example: ① Doping of Silicon with boron.

## Purpose of Doping

Doping is used for the purpose

- 1 - modulating electrical
- 2 - optical
- 3 - structural properties

→ Dopant, A Doping agent is a trace of impurity element that is introduced into a chemical material to alter its original electrical and optical properties.

## Types:

- ① N-Type
- P-Type

We need doping in a semiconductor because the band gap is so small for semiconductor. Doping with small amount of a impurities can increase the conductivity of the material.

## Types of Ceramics

Ceramic is an inorganic non-metallic solid material primarily held in ionic and covalent bond.

There are two types of ceramic

- 1- Crystalline
- 2- non-crystalline.

## Crystalline :

Crystalline ceramic materials are not amenable to great range of processing.



Ceramic forming techniques included shaping by hand or rotation process called "throwing" e.g. slip casting, tape casting, injection molding, dry pressing etc.

## Non-Crystalline

Non-crystalline ceramics, being glass, tend to be formed from melts.

The glass is shaped when either fully molten, by casting or state of coffee-like viscosity, by method like 'blowing' widely used to making cook-top etc.

State some of the merits and demerits of global warming?

## Global Warming:

Global warming is the phenomenon of a gradual increase in the temperature



Near the earth's surface  
This phenomenon has been  
observed over the past  
one or two centuries.  
The temperature of earth's  
increase due to green  
house gases effects  
e.g. CO<sub>2</sub>, CFCs, and  
other pollutants.

### Merits :

① Prevents ice age :

Ice age is the period  
in which the temperature  
drops to an extent that  
life becomes extremely difficult  
on Earth. It is believed  
that there has been five ice  
ages till date with regular  
warmer intervals. This could  
prevent the next ice age  
from happening.

② Better agriculture production:  
The change in climate  
has resulted in varying  
length of different seasons.



In many places winter has reduced giving way to summer. There are some places where the growing season has prolonged.

This would mean improved agriculture productivity.

### ③ Use of Northwest Passage

Due to the ice sheets many parts around arctic are unfit for travel. There

is sea route in Northern Canada called Northwest passage that reduce the travel time between Europe and Asia. This route only

use during warmer days. So due to ice melts due

to global warming, this route can be used more

frequently.

### Demerits:

#### ① Melting of ice:

The rise in temperature will lead to the melting of



ice in the polar regions.  
This means an increase  
in sea level. A rise  
in sea level cause

② floods in low-lying areas.  
Effects plant growth:  
Plants require an optimum  
temperature and rainfall  
to grow well. The recent  
years have seen unpredictable  
rainfall and weather conditions.  
This would affect their  
growth and even lead  
toward extinction.

③ Deaths and Diseases:  
The changing conditions of  
weather have already  
taken a lot of lives.  
many diseases are caused  
as the temperature keeps  
on fluctuating.

d. what is polio? what are  
the challenges in eradication  
of polio in Pakistan?



## Polio :

Polio is an illness caused by virus that mainly affects nerves in the spinal cord or brain stem.

In most severe form of Polio a person can lead to paralysis. It can also lead to trouble in breathing and some time death.

## Challenges to Pakistan

Pakistan faces many challenges in the eradication of Polio.

As Pakistan remains one of the last two countries, one is Afghanistan and other is Pakistan.

### ① Security situations:

The security situation in Pakistan is biggest

obstacle in Polio eradication. According to Health authorities

102 Polio field workers and security persons have been killed include in polio Campaign.

② Religion believes of people. As polio vaccine made in Europe countries, so people believes that it is not good for their children.

③ Boarder with Afghanistan. As Pakistan has boarder with Afghanistan and there is migration of peoples occure due to which polio did not eradicate properly in Pakistan.

Q: 4

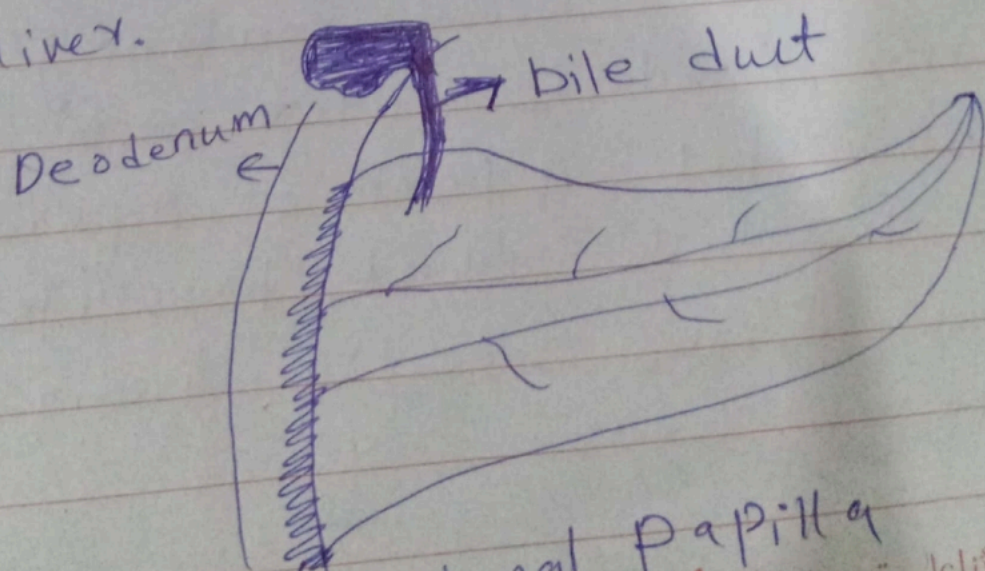
a. Write a note on liver  
Juice "Bile."

Liver is dark brown wedge-shaped organ in human body. It is the largest gland in human



body. Its secretion is known as bile, which enters into the duodenum through bile duct.

- Bile contains no enzymes but it contains pigments which give it green colour
- Bile also contains bile salts which help in the break down of fats.
- When there is accumulation of cholesterol in liver it trap pigments of bile which results into gall stones
- Bile pigments are formed from the break down of haemoglobin in the liver.





b. Describe role of Kidney in excretion.

The system in which metabolic waste products are excreted out of the body is called "excretory system".

A pair of kidney is present in human body which function is to excrete waste from body.

→ Nephron is the structural and functional unit of kidney.

Nephrons are arranged along the both cortex and medulla region. which collectively take part in excretion.

### Working of Nephrons

① Filtration: Blood containing waste products enter into glomerulus, a part of nephrons. Due to high blood pressure and porous walls, blood is filtered here.



2 Reabsorption:

All the use full ingredients of filtrate like glucose, salts and water is reabsorbed in the proximal loop of henel and distal part of the nephron.

3- Secretion:

The inner layer of the nephron also secrete nitrogenous waste products into the lumen of nephron.

All the waste products then enter into collecting duct. which enters opens into Pelvis. from Pelvis these enter into the Ureter then store in the urinary bladder from there excreted out side through Urethra.

c. Discuss Different methods of Solid waste management.

**Solid waste management.**

The technique to dispose Solid refusal off industries



and home in such a way that minimizing the risk of adverse impact on human beings, plant and aquatic life. Effect of dumping waste in to sea and water bodies cover more than 70% of earth surface and food and minerals.

The dumping of waste from houses, factories and industrial material in to water adversely effect humans animals and aquatic life.

### Methods :

#### ① Land fill :

The municipal solid waste is mainly disposed of by dumping off in a land fill. The land fill is digging a large hole in the ground after dumping off the waste material the hole should be closed.

②



## ② Sanitary Land fill:

A Sanitary landfill is a pit with a protected bottom where trash is buried in layers and compressed to make it more solid, it allowing safe decomposition.

## ③ Incineration:

Waste treatment process in which solid waste is burned at high temperature at 900 to 1000°C. It reduce the bulk of solid waste.

## ④ Recycling of Waste:

Some materials like paper, plastic, glass and aluminum, can be recycled.

Recycling should be done because it reduces pollutants and other compounds like Polystyrene bag which are dangerous to environment, can be put again in use.

## SECTION-II

Q: Find the volume of cylinder with radius 30 cm and height 1 m.

$$r = 30 \text{ cm}$$

$$h = 1 \text{ m}$$

$$\text{as Volum of cylinder} = \pi r^2 h$$

$$\pi = 3.14$$

$$\text{Volum} = 3.14 (30)^2 (1)$$

$$\text{Volum} = 3.14 (900)$$

$$V = 2826 \text{ cm}^3$$

Q The average age

$$3 : 5 : 7$$

$$x = ?$$

$$3 : 5 : 7 : x$$

$$\frac{3}{5} \times \frac{7}{x}$$

$$3x = 7 \times 5$$

$$x = \frac{35}{3}$$

$$x = 35/3$$

Q Identify the series

(i)  $8, 19, 52, 151, 447$



DAWN

M T W T F S S

Date:

(ii) 11, 13, 17, 19, 23 —  
11, 13, 17, 19, 23, 25, 29.

d) If a  $\triangle$  is angle —  
Each angle = ?

