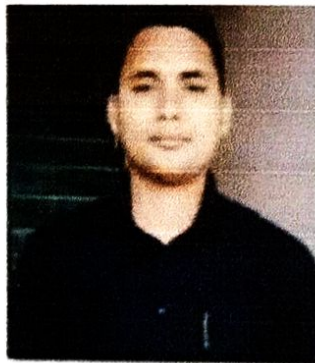




B.S.C. 3<sup>rd</sup> YEAR 2021-22

**C.V.RAMAN PROJECT GROUP**

**PROJECT:- WATER ANALYSIS OF DIFFERENT AREA**



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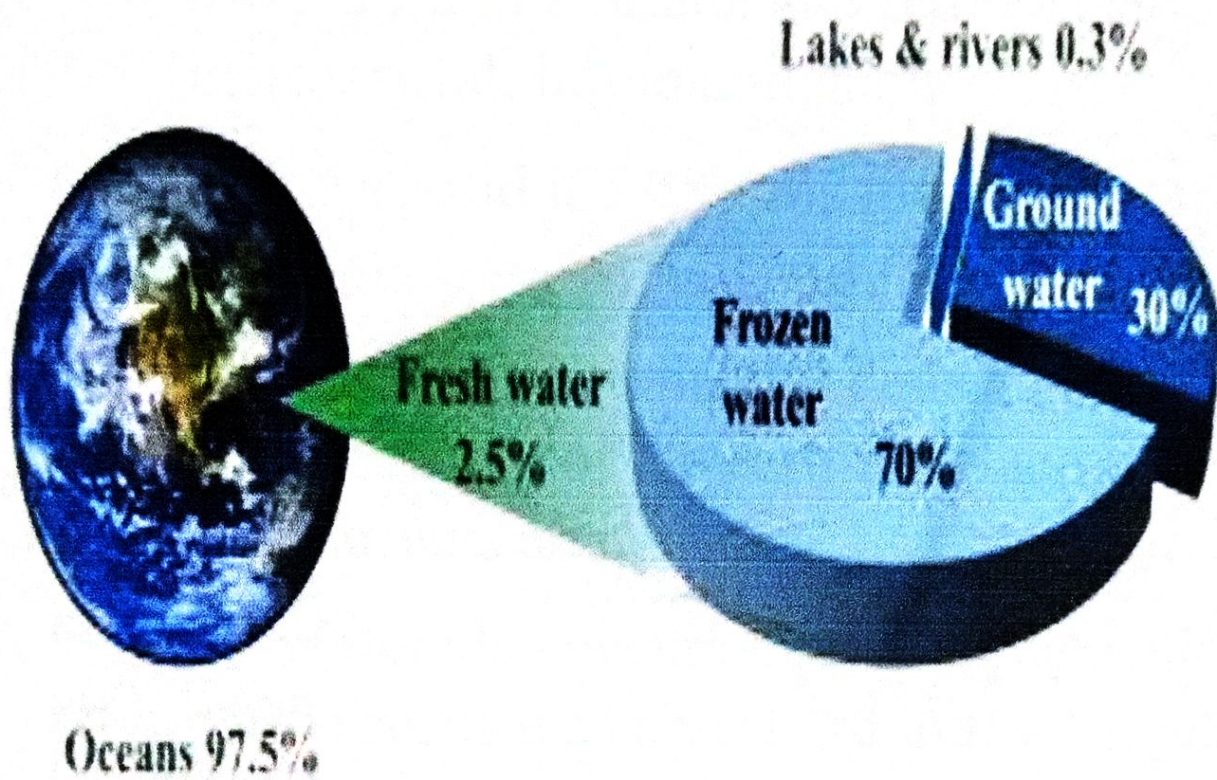


Bhugdev Singh Sidas



# INTRODUCTION :-

- ❖ Water is the nature's most wonderful abundant and useful compound of the essential elements for the existence of human beings, animals and plants. Water is rated to be of greatest importance.
- ❖ Without food, a human being can survive for a number of days, but water is such an essential thing without it one cannot survive.
- ❖ Water is not only essential for the lives of animals and plants, but also occupies a unique position in industries.
- ❖ Water is also used as a coolant in power and chemical plants. In addition to it, water can also be used in the production of steel, rayon, paper, drinking water, fire fighting etc.



## WORD WATER DISTRIBUTION



## OCCURRENCE:-

- ❖ Water is the only substance that occurs at ordinary temperatures in all three states of matter solid, liquid and gas .
- ❖ As a solid ice It forms glaciers frozen lakes and rivers, snow, hail and forest.
- ❖ It is liquid as rain and dew and it covers three quarters of the earth's surface in swamps lakes, rivers and oceans.
- ❖ Water also occurs in the soil beneath the earth's surface as a vast ground water reservoir.

## Availability of water :-

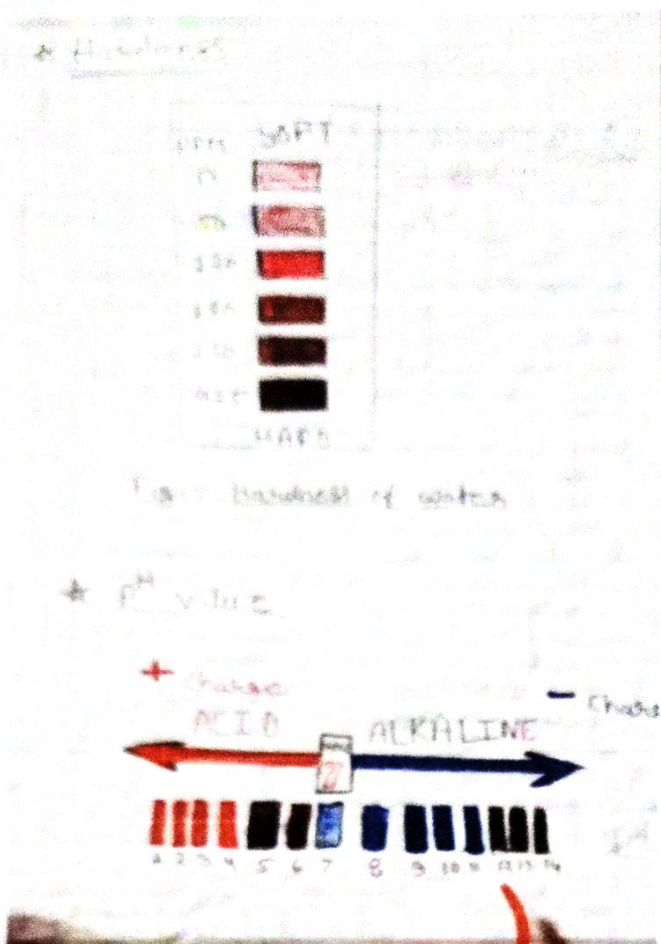
- 97.0 % - Oceanic/Sea water.
- 3.0 % - Fresh water.
- 2.4 % - Glaciers/ice caps.
- 0.3 % - Under ground water .
- 0.3 % - Total available water for ready use.

## Characteristics of water :-

As per the suggestion given by world health organization (W.H.O.) and by India council of medical research (ICMR), the following are the important characteristics of potable water.

1. It should be clear colorless and odorless.
2. It should be cool and pleasant to taste.
3. It should be free from harmful bacteria and suspended impurities.
4. It should be free from dissolved gases like  $\text{CO}_2$ ,  $\text{H}_2\text{O}$ ,  $\text{NH}_3$ , etc. and poisonous minerals like lead arsenic manganese etc.





## Hardness:-

- Its cause due to presence of bicarbonate, sulphate, chloride, nitrate, of calcium and magnesium.
- Total hardness of drinking water should not be 100 PPM.
- Find hardness by EDTA method.

## P<sup>H</sup> Value:-

- Drinking purpose P<sup>H</sup> value is 6.5 to 8.
- P<sup>H</sup> is Neutral .
- P<sup>H</sup> less than 7 is acidic and greater than 7 is alkaline.

## Chloride Content :-

- Mainly substance for sodium chloride.
  - Should not be more than 250 PPM.

## Nitrogen :-

- The sum of total ammonia nitrogen and the organic nitrogen is called kjeldahl nitrogen .
- It should not be more than 0.15 PPM .

## Some other important compound :-

- Iron and manganese - 0.3 PPM
- Arsenic and lead - 0.05 PPM
- Copper - 3.0 PPM
- Fluoride - 1.5 PPM
- Cadmium - 0.003 PPM
- Phenolic compound - 0.001 PPM



# Simple analytical report :-

(1) TABLE:- Indian Standards & WHO guidelines for drinking water.

S.N.	Parameters	Bis.indian Standards(Is 10500-1991)		World health Organization WHO guideline
		Disirable	Pernissible	
1	Turbidity(NTV)	5.0	10	5.0
2	Total Hardness (AS caco3)(mgl)	300	600	500
3	Dissolved solid (mgl)	500	2000	1000
4	sulphate (mgl)	200	400	400
5	Cadnium (cd)(mgl)	0.01	No relaxation	0.005
6	Iron (fe)(mgl)	0.3	1.5	0.3
7	Zinc(Zn)(mgl)	5.0	1.5	5.0
8	Copper(cu)(mgl)	1.0	1.5	1.0



(2) TABLE:-Determination of Heavy metal  
Underground water in Raigarh Districts C.G.

S.N.	Heavy Metal in mgl	Raigarh (S1)	Pussore(S2)	Kanaktura (S3)	Bonda(S4)
1	Cd	0.009	0.003	0.005	0.004
2	Fe	1.20	0.08	0.89	0.79
3	Zn	9.70	0.25	8.31	7.50
4	Cu	0.07	0.07	0.06	0.05

#### IV. CONCLUSION :-

The study of various location of ground water samples of Raigarh C.G. district was found the important parameters namely temperature, pH, total dissolved solid, alkalinity, hardness and chloride. The comparative study of the ground water samples no samples have crossed the maximum level of permissible parameters. The experimental investigation as in result the various locations ground water samples are suitable for uses water quality for various purposes.

#### REFERENCES :-

M.A.Momodu and C.A.Anyakora,