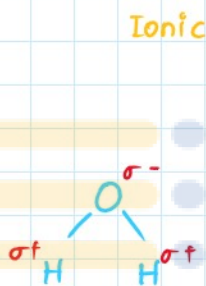


## 13.2 Importance of Water

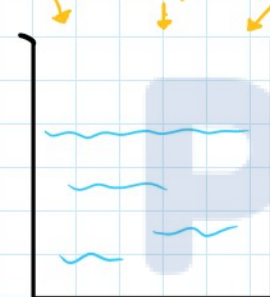
### IMPORTANCE OF WATER

- B.P =  $100^{\circ}\text{C}$
- F.P =  $0^{\circ}\text{C}$

- **SOLVENT PROPERTY** → Universal Solvent



Charged



Organic molecules  
(Non-Polar)

Solubility

Ionic > Charged molecules > Organic molecule.

- Hetero atomic molecule
- most abundant part of protoplasm (70-90%)
- ptb → 65-80%.
- Seeds → 20%
- Bone cell → 20% (Osteocytes)
- Brain cell → 85%
- Blood → 88%
- Jelly fish → 99%

### HYDROGEN BONDING

→ Intermolecular force of attraction

↳ Without H-bonding

- B.P →  $-80^{\circ}\text{C}$
- F.P →  $-100^{\circ}\text{C}$

### HEAT OF VAPOURIZATION

Plants → Transpiration

- 574 Kcal / Kg
- 574 cal/g

Animals → Perspiration / Sweating



2ml

1000 ml

Temperature decreased  
 $1^{\circ}\text{C}$

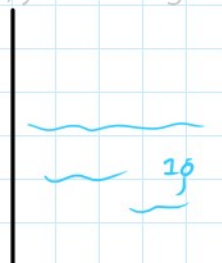
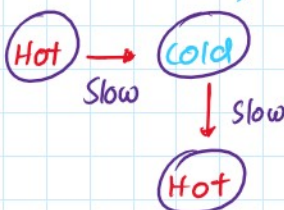
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### SPECIFIC HEAT

→ Energy required to raise the temperature of 1g of water by  $1^{\circ}\text{C}$ .

Thermostability



16°C

15°C

1.0 Calories  
4.18 Joules

### COHESION

- Force of attraction

### ADHESION

- Force of attraction

### COHESION

- Force of attraction between water molecules.

### ADHESION

- Force of attraction between water and any surface.

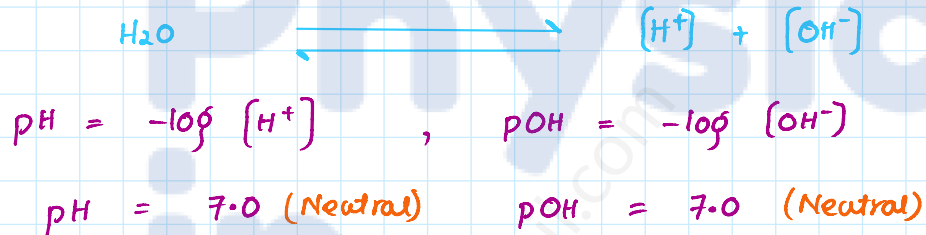
### CONDENSATION



### HYDROLYSIS



### IONIZATION OF WATER



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