

Class X

SCIENCE

PHYSICS

**Force**

- Moment of force and equilibrium
- Centre of gravity and uniform circular motion

**Work, power and energy**

- Measurement of work
- Different forms of energy
- Conservation of energy

**Machines**

- Technical terms and levers
- Pulley

**Refraction of light at plane surfaces**

- Laws of refraction
- Refractive index
- Refraction of light through a glass slab and prism
- Applications of refraction of light
- Critical angle and total internal reflection

**Refraction through a lens**

- Technical terms related to lens
- Formation of image by a lens
- Sign convention and lens formula
- Application of lenses

**Spectrum**

- Deviation ,dispersion through a prism
- Electromagnetic spectrum and scattering of light.



## Sound

- Production and propagation of sound waves
- Characteristics of sound subjective and objective nature
- Determination of speed of sound by the method of echo
- Types of vibrations
- Resonance

## Current electricity

- Concept of current, potential difference and resistance; ohm's law
- Electromotive force, terminal voltage and internal resistance of a cell, combination of resistors
- Electrical energy and power

## Household circuits

- Transmission of power and house wiring
- Some essential components of house wiring system

## Electo-magnetism

- Magnetic effect of electric current
- Force on a current carrying conductor in a magnetic field and its application in d.C. Motor
- Electromagnetic induction and its applications to a.C. Generator and transformer

## Calorimetry

- Heat capacity, specific heat capacity and its measurement
- Change of phase and latent heat

## Radioactivity

- Atomic structure and radioactivity
- Nuclear fission and fusion.

# CHEMISTRY

## Organic chemistry

- IUPAC names and structure of organic compounds.
- Preparation of Alkanes, alkenes, alkynes, Alcohol and acids.
- Chemical properties.
- Industrial application of hydrocarbons.

## Periodic table

- Trends of periodic table.
- Dobernier triads.
- Mendeleev periodic law.
- Position of elements in Periodic table.

## Metallurgy

- Reactivity series of metals.
- Occurrence of metal in nature and their extraction.
- Alloys.

## Chemical bonding

- Electrovalent bonding
- Covalent bonding
- Polar
- Non polar
- Coordinate bonding

## Acids Base and salts

- Types and preparation

## Analytical Chemistry

- Avogadro law
- Mole concepts.





## Electrolysis

- Electrochemical series
- Application of electrolysis

## Study of compounds

- Hydrogen chloride
- Ammonia
- Nitric acid
- Sulphuric acid

# BIOLOGY

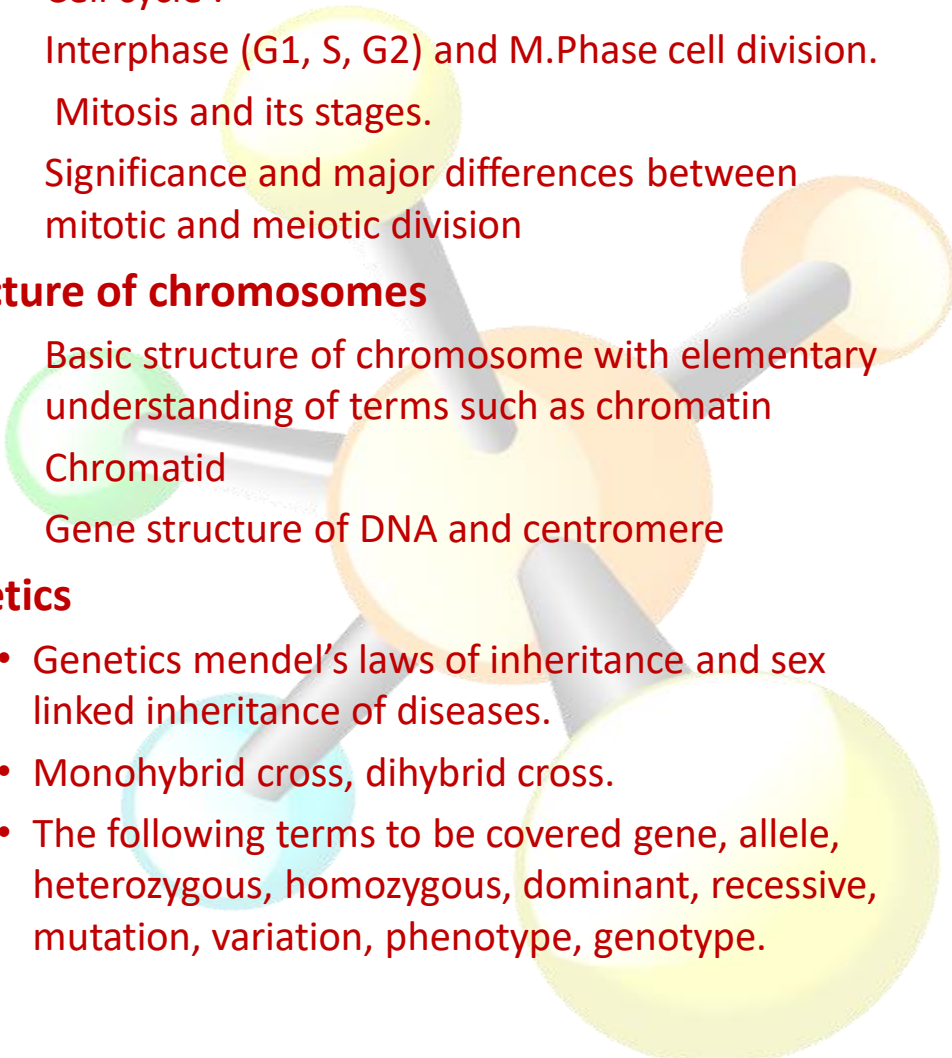
## Cell cycle and cell division


- Cell cycle .
- Interphase (G1, S, G2) and M.Phase cell division.
- Mitosis and its stages.
- Significance and major differences between mitotic and meiotic division

## Structure of chromosomes

- Basic structure of chromosome with elementary understanding of terms such as chromatin
- Chromatid
- Gene structure of DNA and centromere

## Genetics

- Genetics mendel's laws of inheritance and sex linked inheritance of diseases.
  - Monohybrid cross, dihybrid cross.
  - The following terms to be covered gene, allele, heterozygous, homozygous, dominant, recessive, mutation, variation, phenotype, genotype.
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- Sex determination in human beings.
  - Sex linked inheritance of diseases to include haemophilia and colour blindness (only criss cross inheritance).

### **Absorption by roots**

- Absorption by roots, imbibition; diffusion and osmosis; osmotic pressure, root pressure.
- Turgidity and flaccidity; plasmolysis and deplasmolysis.
- The absorption of water and minerals, active and passive transport (in brief).
- The importance of root hair.

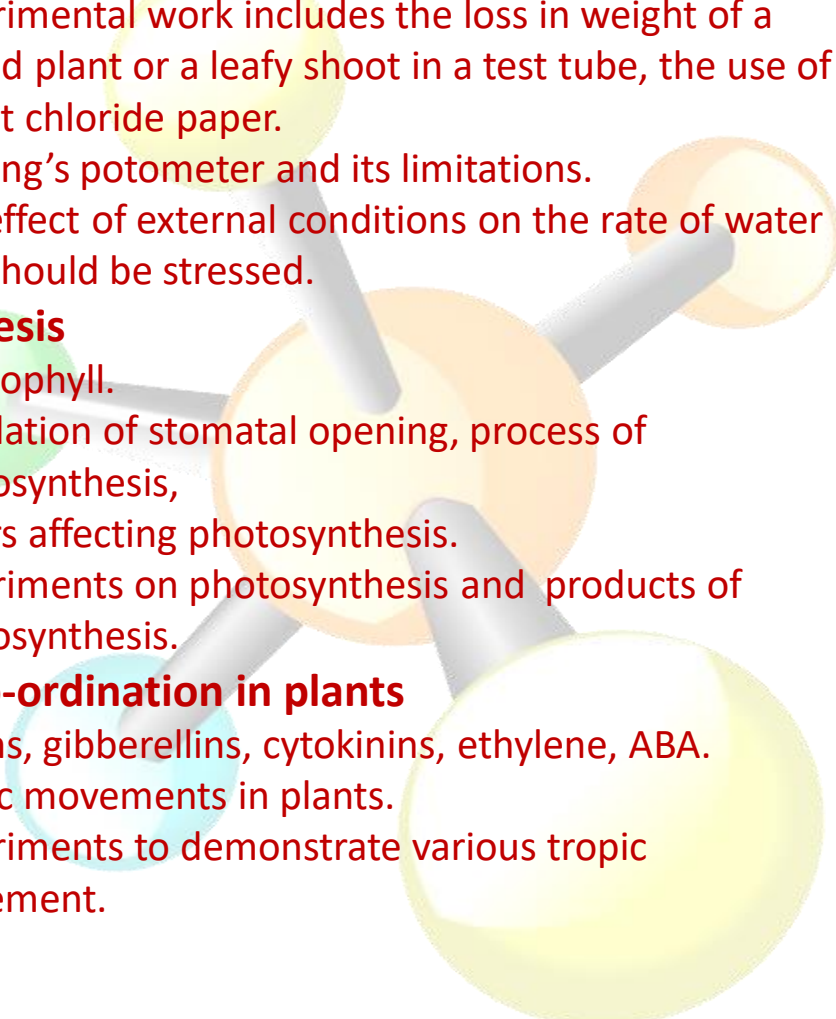
### **Transpiration**

- Transpiration, process and significance.
- Experimental work includes the loss in weight of a potted plant or a leafy shoot in a test tube, the use of cobalt chloride paper.
- Ganong's potometer and its limitations.
- The effect of external conditions on the rate of water loss should be stressed.

### **Photosynthesis**

- Chlorophyll.
- Regulation of stomatal opening, process of photosynthesis,
- Actors affecting photosynthesis.
- Experiments on photosynthesis and products of photosynthesis.

### **Chemical co-ordination in plants**

- Auxins, gibberellins, cytokinins, ethylene, ABA.
  - Tropic movements in plants.
  - Experiments to demonstrate various tropic movement.
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## Circulatory system

- Need for transport inside the body.
- Fluids in our body, the blood, clotting of blood.
- Blood transfusion.
- Blood groups.
- Blood circulatory system.
- The two blood circulations, pulse, blood pressure.
- Tissue fluid and lymph.

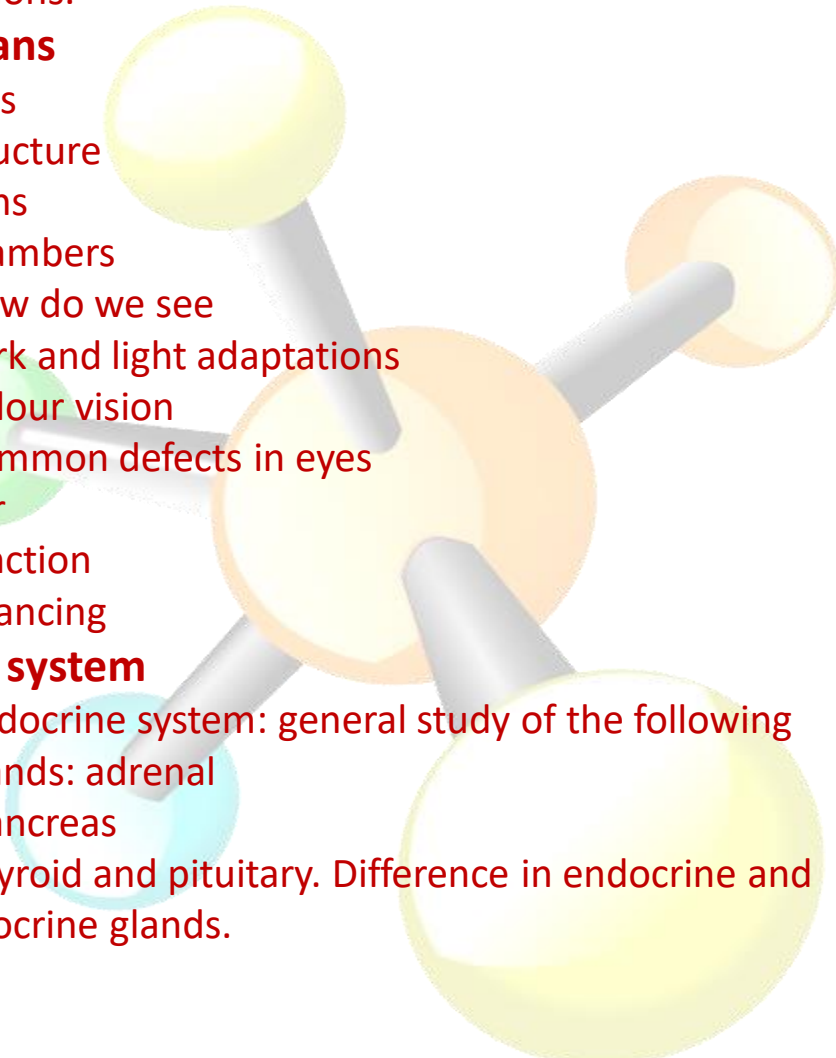
## Nervous system

- Need of nervous system.
- Neuron, nerves, brain, spinal cord, reflexes, types of reflexes.
- Nervous pathways in reflexes, complex reflex actions.

## Sense organs

- Eyes
- Structure
- Lens
- Chambers
- How do we see
- dark and light adaptations
- Colour vision
- Common defects in eyes
- Ear
- Function
- Balancing

## Endocrine system

- Endocrine system: general study of the following glands: adrenal
  - Pancreas
  - Thyroid and pituitary. Difference in endocrine and exocrine glands.
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## Reproductive system

- The reproductive system: organs
- Fertilisation.
- Menstrual cycle
- Outline of menstrual cycle.
- Implantation
- Placenta
- Parurition
- Twins
- Triplets
- Quardruplets

## Human evolution

- Theories of evolution
- Human evolution
- Modern man.

## Population

- Population: problems posed by the increase in population in india; need for adopting control measures - population control.

## Pollution

- Air pollution
  - Soil pollution
  - Noise pollution
  - International ozone day
  - Vehicular standards.
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