

NATIONAL PRIMA TALENT OLYMPIAD EXAMINATIONS

SCIENCE

CLASS VIII

PHYSICS

Physical quantities and measurement

- Measurement of volume
- Measurement of density
- Relative density
- Factors affecting density
- Laws of floatation

FORCE AND PRESSURE

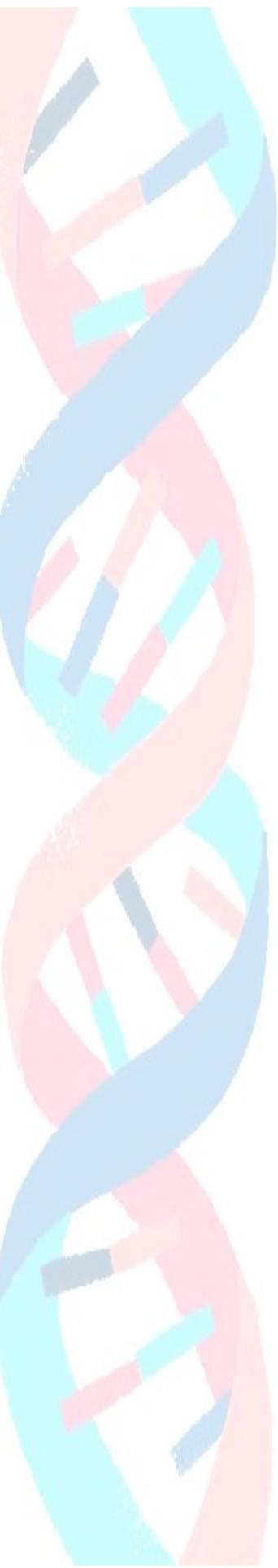
- Types of motion
- Scalar and vector quantities
- Mass and weight
- Force and its turning effect
- Concept of pressure
- Pressure in liquids and
- Atmospheric pressure

ENERGY

- Forms of energy
- Energy transformation
- Sources of energy
- Conservation of energy
- Work and energy
- Differences between energy and power

HEAT

- Measurement of heat and temperature
- Effects of heat
- Thermal expansion
- Transfer of heat



Light energy

- Image formation in mirror
- Reflection
- Speed of light
- Primary and complementary colours
- Colour subtraction

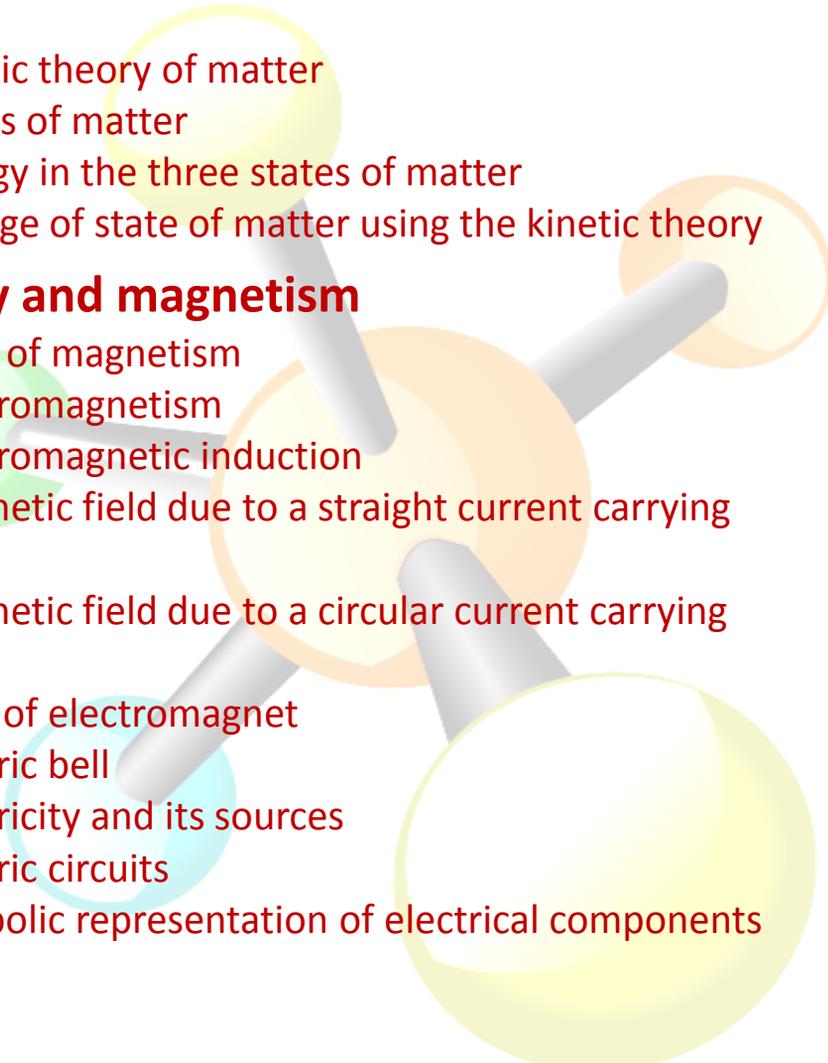
SOUND

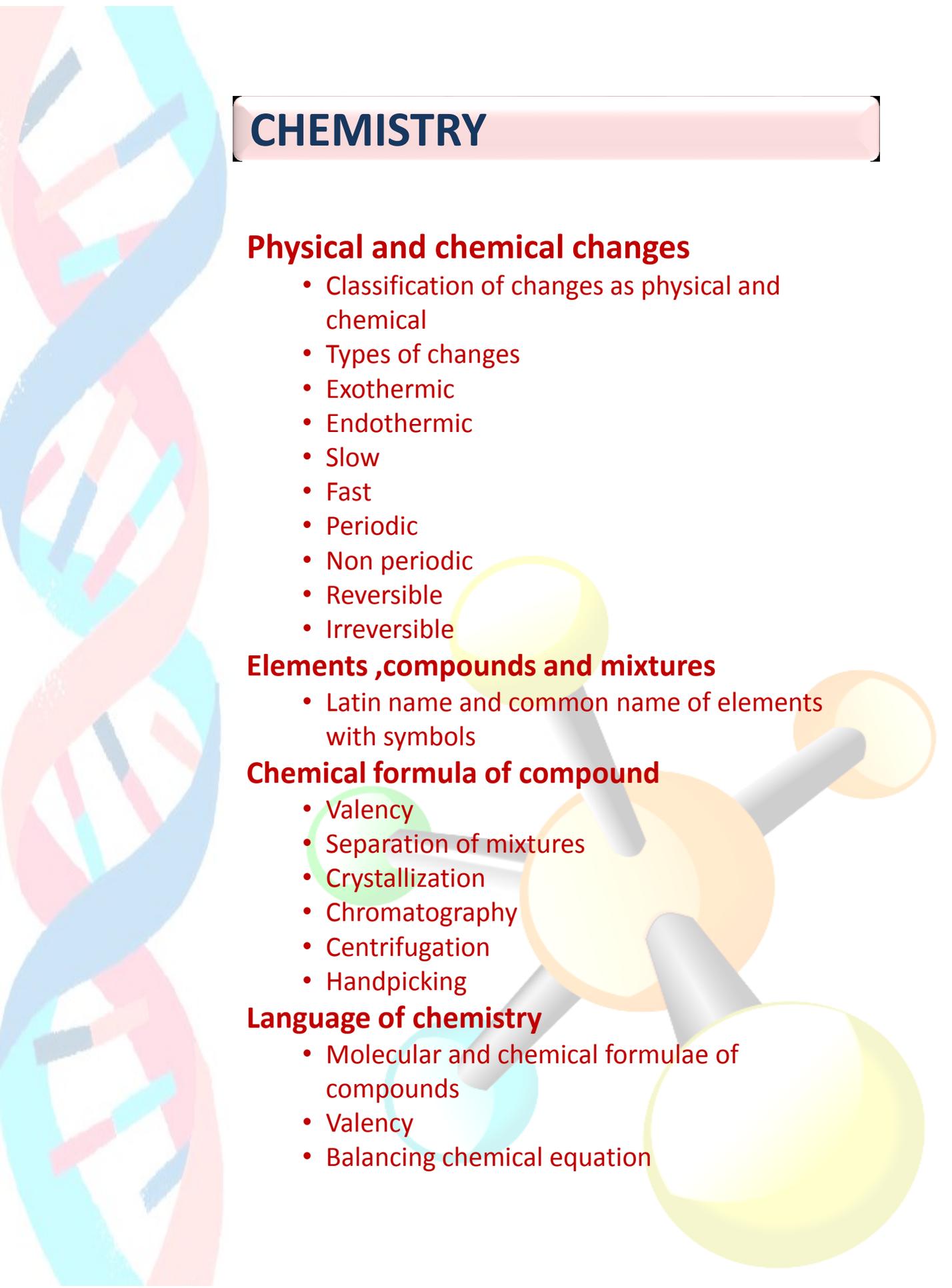
- Sources and production of sound
- Sound as longitudinal waves and terms related to sound wave
- Characteristics of sound waves
- Reflection of sound
- Sonar

Matter

- Kinetic theory of matter
- States of matter
- Energy in the three states of matter
- Change of state of matter using the kinetic theory

Electricity and magnetism

- Laws of magnetism
 - Electromagnetism
 - Electromagnetic induction
 - Magnetic field due to a straight current carrying wire,
 - Magnetic field due to a circular current carrying wire
 - Uses of electromagnet
 - Electric bell
 - Electricity and its sources
 - Electric circuits
 - Symbolic representation of electrical components
- 



CHEMISTRY

Physical and chemical changes

- Classification of changes as physical and chemical
- Types of changes
- Exothermic
- Endothermic
- Slow
- Fast
- Periodic
- Non periodic
- Reversible
- Irreversible

Elements ,compounds and mixtures

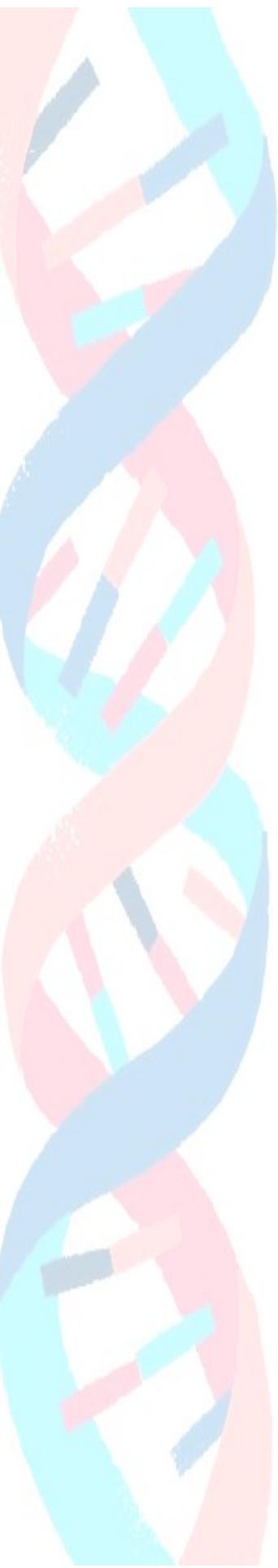
- Latin name and common name of elements with symbols

Chemical formula of compound

- Valency
- Separation of mixtures
- Crystallization
- Chromatography
- Centrifugation
- Handpicking

Language of chemistry

- Molecular and chemical formulae of compounds
- Valency
- Balancing chemical equation



Atomic structure

- Contribution of scientists towards the structure of atom
- Electronic configuration of atom
- Fundamental particles of atom
- Radicals
- Position of elements in periodic table
- Isotopes

Matter

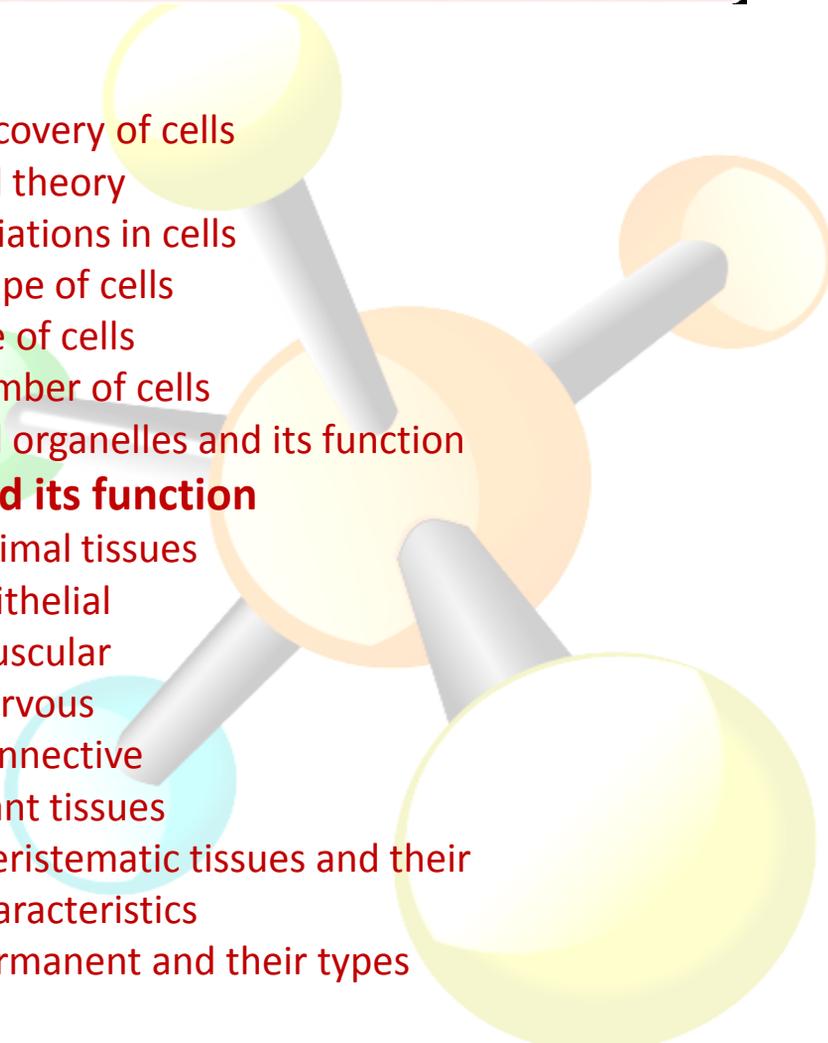
- Kinetic molecular theory of matter
- Interconversion of states of matter

BIOLOGY

Cells

- Discovery of cells
- Cell theory
- Variations in cells
- Shape of cells
- Size of cells
- Number of cells
- Cell organelles and its function

Tissues and its function

- Animal tissues
 - Epithelial
 - Muscular
 - Nervous
 - Connective
 - Plant tissues
 - Meristematic tissues and their characteristics
 - Permanent and their types
- 



Nutrition in plants and animals

- Different components of food
- Deficiency diseases
- Balanced diet
- Nutrition in plants
- Photosynthesis
- Types of nutrition
- Food chain and food web

Transport of food and minerals in plants

- Absorption of water by roots
- Conducting tissue
- Transpiration
- Guttation
- Transport of food and other substances
- Importance of minerals

Reproduction in plants and animals

- Modes of reproduction
- Asexual reproduction in plants and animals
- Sexual reproduction in plants and human beings
- Tissue culture

Human body

- Nervous system
- Neuron
- Human brain
- Reflex action and reflex arc
- Endocrine system
- Circulatory system
- Blood
- Blood vessels