SNC2DN Course on a Page 2023-2024

Biology

- Diffusion & Osmosis
- Hierarchical organization
- Organelles
  - structure, function, type of cell
- Cell cycle & stages of mitosis
  - explain & identify
- Cancer in relation to cell cycle
- Stem cells & differentiation
- Tissues
  - 4 main types, structures & functions
- Organ systems:
  - main functions & organs
  - **Digestive** – nutrient & water absorption, accessory organs
  - **Respiratory** – pathway of air in & out of lungs, details of gas exchange
  - **Circulatory** – arteries & veins, blood, circulation
  - **Interactions** between systems (specific locations/ anatomy)
- Plant: Tissues, systems & flower parts & functions covered in dissection

Optics

- Production of light
- Properties of light
- Reflection
  - Law of reflection – normal, angle of incidence, angle of reflection, how to measure angles
  - Plane & curved (convex & concave) mirrors - Image **characteristics (SALT)**, **calculate**, **locate** & **draw** images
- Refraction
  - Describe light passing through different media – speed, direction change
  - Index of refraction – **trends** & **calculate**
  - Angle of incidence, angle of refraction, critical angle
  - Lenses (diverging & converging)- Image **characteristics (SALT)**, **calculate**, **locate** & **draw** images

Formulas will <u>NOT</u> be provided

$$n = c/v$$

$$m = \frac{hi}{ho} = -\frac{di}{do}$$

$$\frac{1}{f} = \frac{1}{di} + \frac{1}{do}$$

Chemistry

- Atoms
  - Atomic structure & subatomic particles
  - Ions – how/why they form
  - Counting atoms & elements in compounds
- Periodic table patterns
- Bonding – naming, formulas, properties
  - Ionic compounds
  - Covalent compounds (molecules)
  - Acids & bases
- Chemical equations – write & balance
- Types of reactions – **identify, predict products** & **balance**
- Law of conservation of mass
- Acids – properties & characteristics
- Bases - properties & characteristics
- pH scale
- Neutralization reactions

Climate Change

- Greenhouse gases & sources
- Greenhouse effect
- Recording atmospheric conditions
- Actions to reduce climate change

Key Topics

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Biology

Anaphase
Alveoli/alveolus
Artery
Cancer
Capillary
Carcinogen
Cell cycle
Cell membrane
Cell wall
Cellular Differentiation
Centriole
Centromere
Chloroplast
Chromosome
Connective Tissue
Cytokinesis
Cytoplasm
DNA
Endoplasmic Reticulum
Epithelial Tissue
Eukaryote
Golgi Apparatus
Interphase
Meristematic Cell
Metaphase
Metastasis
Mitochondria
Mitosis
Muscle Tissue
Mutation
Nerve Tissue
Nucleus
Organ
Organelle
Organ System
Phloem
Prokaryote
Prophase
Ribosome
Sister chromatids
Specialized Cell
Spindle fiber
Stem Cell
Tissue
Telophase
Vacuole
Vein
Xylem

Optics

Angle of Incidence (θ_i)
Angle of Reflection (θ_r)
Angle of Refraction (θ_R)
Attitude
Bioluminescence
Centre of Curvature (C)
Chimiluminescence
Concave
Converging
Convex
Critical Angle (θ_c)
Diffuse Reflection
Diverging
Electromagnetic Spectrum
Fluorescence
Focus (F) / Focal point
Image
Incandescence
Incident Ray
Index of Refraction (n)
Lateral Inversion
Light-Emitting Diode (LED)
Location of image
Luminous
Medium
Mirror
Non-Luminous
Normal
Object
Optical Centre (O)
Phosphorescence
Plane
Principal Axis (PA)
Principal Focus (F)
Real Image
Reflected Ray
Reflection
Refracted Ray
Refraction
Secondary Focus (F')
Total Internal Reflection
Triboluminescence
Type of image
Virtual Image
Visible Light
Visible Spectrum

Chemistry

Acid
Anion
Atom
Atomic number
Base
Cation
Chemical Change
Chemical Equation
Chemical Property
Coefficient
Combustion
Compound
Covalent Bond
Decomposition
Diatomic Molecule
Double Displacement
Electron
Element
Group
Halogens
Indicator
Ion
Ionic Bond
Ionic Charge
Ionic Compound
Law of Conservation of Mass
Molecular Compound
Molecule
Neutralization
Neutron
Noble Gases
Period
Periodic Table
pH Scale
Physical Change
Physical Property
Polyatomic Ion
Product
Proton
Reactant
Single Displacement
Synthesis Reaction
Valence electrons
Valence Shell
Word Equation

Key Terms: NOT an inclusive list of terms

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