



DOON INTERNATIONAL SCHOOL

BHUBANESWAR, ODISHA

School Code No. – 53185, Affiliation No. - 153203

THE (DISET) DOON INTERNATIONAL SCHOOL XI ENTRANCE TEST

SYLLABUS 2020 – 21

Date & Timing	Subject	Nos. of Questions	Marks
2 nd February, 2020 11.00 A.M. to 1.30 P.M.	English	20	20
	Physics	20	20
	Chemistry	20	20
	Mathematics	20	20
	Biology	20	20
	Total		100

PHYSICS

Motion:

Distance and displacement, velocity; uniform and non-uniform motion along a straight line; acceleration, distance-time and velocity-time graphs for uniform motion and uniformly accelerated motion, derivation of equations of motion by graphical method; elementary idea of uniform circular motion.

Force and Newton's laws :

Force and Motion, Newton's Laws of Motion, Action and Reaction forces, Inertia of a body, Inertia and mass, Momentum, Force and Acceleration. Elementary idea of conservation of Momentum.

Gravitation:

Gravitation; Universal Law of Gravitation, Force of Gravitation of the earth (gravity), Acceleration due to Gravity; Mass and Weight; Free fall.



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Floatation:

Thrust and Pressure. Archimedes' Principle; Buoyancy; Elementary idea of Relative Density.

Work, energy and power:

Work done by a Force, Energy, power; Kinetic and Potential energy; Law of conservation of energy.

Sound:

Nature of sound and its propagation in various media, speed of sound, range of hearing in humans; ultrasound; reflection of sound; echo and SONAR. Structure of the Human Ear (Auditory aspect only).

Optics :

Reflection of light by curved surfaces; Images formed by spherical mirrors, centre of curvature, principal axis, principal focus, focal length, mirror formula, magnification.

Refraction; Laws of refraction, refractive index. Refraction of light by spherical lens; Image formed by spherical lenses; Lens formula; Magnification. Power of a lens.

Functioning of a lens in human eye, defects of vision and their corrections, applications of spherical mirrors and lenses. Refraction of light through a prism, dispersion of light, scattering of light, applications in daily life.

Current Electricity : Effects of Current Electric current, potential difference and electric current. Ohm's law; Resistance, Resistivity, Factors on which the resistance of a conductor depends. Series combination of resistors, parallel combination of resistors and its applications in daily life. Heating effect of electric current and its applications in daily life. Electric power, Interrelation between P, V, I and R.

Magnetic effects of current :

Magnetic field, field lines, field due to a current carrying conductor, field due to current carrying coil or solenoid; Force on current carrying conductor, Fleming's Left Hand Rule, Electric Motor, Electromagnetic induction. Induced potential difference, Induced current. Fleming's Right Hand Rule, Electric Generator, Direct current. Alternating current: frequency of AC. Advantage of AC over DC. Domestic electric circuits.

CHEMISTRY



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Definition of matter:

Solid, liquid and gas; characteristics -shape, volume, density; change of state-melting (absorption of heat), freezing, evaporation (cooling by evaporation), condensation, sublimation.

Nature of matter: Elements, compounds and mixtures. Heterogeneous and homogenous mixtures, colloids and suspensions. Particle nature, basic units:

Atoms and molecules:

Law of constant proportions, Atomic and molecular masses.

Mole concept:

Relationship of mole to mass of the particles and numbers.

Structure of atoms:

Electrons, protons and neutrons, valency, chemical formula of common compounds. Isotopes and Isobars.

Chemical Substances:

Nature and Behaviour

Chemical reactions:

Chemical equation, Balanced chemical equation, implications of a balanced chemical equation, types of chemical reactions: combination, decomposition, displacement, double displacement, precipitation, neutralization, oxidation and reduction.

Acids, bases and salts:

Their definitions in terms of furnishing of H^+ and OH^- ions, General properties, examples and uses, concept of pH scale (Definition relating to logarithm not required), importance of pH in everyday life; preparation and uses of Sodium Hydroxide, Bleaching powder, Baking soda, Washing soda and Plaster of Paris.

Metals and non metals:

Properties of metals and non-metals; Reactivity series; Formation and properties of ionic compounds; Basic metallurgical processes; Corrosion and its prevention.

Carbon compounds:



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Covalent bonding in carbon compounds. Versatile nature of carbon. Homologous series. Nomenclature of carbon compounds containing functional groups (halogens, alcohol, ketones, aldehydes, alkanes and alkynes), difference between saturated hydrocarbons and unsaturated hydrocarbons. Chemical properties of carbon compounds (combustion, oxidation, addition and substitution reaction). Ethanol and Ethanoic acid (only properties and uses), soaps and detergents.

MATHEMATICS

Number System:

Real Number

Algebra

Polynomials, Pair of Linear equations in two variables, Quadratic equations, Arithmetic progressions, Geometric Progressions.

Co-ordinate Geometry

Two dimensional system, Slopes, Angle between lines, Intercepts, Equation of Straight lines.

Geometry

Euclid's Geometry, Lines and Angles, Triangles, Circles.

Mensuration

Areas related to circles, Surface areas and volumes of cylinder, Cone, Sphere, Areas, related to triangles, Area of Quadrilateral.

Trigonometry

Trigonometric ratios, Trigonometric identities, Heights and Distance.

Statistics

Mean, Median and Mode

Probability

Sample space, Events, Types of events, Probability of elementary simple events.

Basic Arithmetic Problems (Word Problems)

Ratio, Proportion, Profit, Loss



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BIOLOGY

Cell -Basic Unit of life :

Cell as a basic unit of life; prokaryotic and eukaryotic cells, multicellular organisms; cell membrane and cell wall, cell organelles and cell inclusions; chloroplast, mitochondria, vacuoles, endoplasmic reticulum, Golgi apparatus; nucleus, chromosomes -basic structure, number.

Cell Cycle, Cell division:

Mitosis, Meiosis, Significance and major differences.

Tissues, Organs, Organ System, Organism:

Structure and functions of animal and plant tissues (only four types of tissues in animals; Meristematic and Permanent tissues in plants).

Biological Diversity :

Diversity of plants and animals-basic issues in scientific naming, basis of classification. Hierarchy of categories / groups, Major groups of plants (salient features) (Bacteria, Thallophyta, Bryophyta, Pteridophyta, Gymnosperms and Angiosperms). Major groups of animals (salient features) (Non-chordates upto phyla and chordates upto classes).

Life processes:

Basic concept of nutrition, respiration, circulation, excretion & Transport in plant and animals .

Control and co-ordination in animals and plants:

Tropic movements in plants; Introduction of plant hormones; Control and co-ordination in animals: Nervous system; Voluntary, involuntary and reflex action; Chemical co-ordination: animal hormones.

Reproduction:

Reproduction in animals and plants (asexual and sexual) reproductive health

Heredity and Evolution:

Heredity; Mendel's contribution-Laws for inheritance of traits: Sex determination: Basic concepts of evolution.



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ENGLISH

1. Tenses
2. Modals (have to/had to, must, should, need, ought to and their negative forms)
3. Use of passive voice
4. Subject – verb concord
5. Reporting
 - a. Commands and requests
 - b. Statements
 - c. Questions
6. Clauses:
 - a. Noun clauses
 - b. Adverb clauses of condition and time
 - c. Relative clauses
7. Determiners
8. Prepositions
9. Gap filling with one or two words to test Prepositions, Articles, Conjunctions and Tenses
10. Editing or omission.
11. Sentences reordering or Sentence Transformation in context.
