



Sharada

**VIDYANIKETHANA
PU COLLEGE**

TALAPADY, MANGALURU

SYLLABUS FOR SAT (PRATHIBHA PRAVEENA) EXAMINATION

<u>Subject</u>	<u>Portion</u>
PHYSICS	<p>1. Units and measurements System of units, conversion of units from one system to another</p> <p>2. Kinematics Motion along straight line, motion of object with constant velocity and constant acceleration, $x - t$, $v - t$ graph, motion under gravity, motion in plane, projective motion</p> <p>3. Mechanics Force, Different types of forces, Newton's laws of motion, Uniform circular motion, Work, Energy and Power, Law of conservation of mechanical energy, conservation of linear momentum</p> <p>4. Gravitation Newton's laws of gravitation, Kepler's laws of planetary motion, acceleration due to gravity and its variation with height and depth</p> <p>5. Fluid mechanics Pascal's law, variation of pressure with depth, Archimedes principle, viscous force</p> <p>6. Waves Properties of wave, types of wave, equation of progressive wave, sound wave and its properties, velocity of sound wave in different medium</p> <p>7. Electric charges and field Basic properties of electric charge, Coulomb's law, Electric field, Electric potential for point charge, spherical shapes</p>

8. Electricity

Definition of current, Ohm's law, Concepts of emf, Potential difference, Resistance and Resistance in series and parallel combinations, Resistivity, Electric power and household circuits.

9. Electro magnetism

Magnetic effects of current : Oersted's experiment, Rule to find the direction of magnetic field, Solenoid, Electromagnets and permanent magnets force due to magnetic field on a current carrying conductor

10. Electromagnetic induction

Faraday's experiment for EMI, Induced emf, AC generator, Equation of AC signal transformers , self induction, mutual induction

11. HEAT

Definitions of heat and temperature, Different types of thermometers, Specific heat capacities, principle of method of mixtures, Latent heat, change of phase.

12. Optics

Refraction, Reflection, Laws of refraction, Principle of Reversibility, Refraction through prism, Apparent and Real depth, Critical angle and total internal reflection, Refraction through mirrors and lens, Power of lens magnification and determination , of focal length of lens, Human eye

CHEMISTRY

I. Periodic properties and variations of properties

- a. Periodic properties and their variations in groups and periods
- b. Periodicity on the basis of Atomic number of elements.

II. Chemical Bonding

III. Study of acids, Bases and Salts

- a) Simple definitions in terms of the molecules and their characteristic properties.
- b) Ions present in mineral acids, alkalis and salts and

their solutions; use of litmus and pH paper to test for acidity and alkalinity.

c) Definitions of salt and types of salts

d) General properties of salts

e) Preparations of salts.

IV. Mole concept

V. Electrolysis

a) Electrolytes and non- electrolytes

b) Applications of electrolysis

c) Acids, Bases and salts as electrolytes

VI. Metallurgy

a) Definition of metals and non-metals

b) Comparison of metals and non-metals

c) Reduction of metallic oxides

d) Extraction of metals based on the activity series

e) Corrosion of iron and its prevention

f) Metals and their alloys

VII. Organic Chemistry

a) Introduction to Organic Compounds

b) Structure and isomerism

c) Homologous Series

d) Nomenclature

e) Hydrocarbons (alkanes, alkenes, alkynes)

f) Alcohols (Ethanol)

g) Carboxylic acids (Acetic acid)

MATHEMATICS

I. Real Numbers

II. Pair of linear equations

III. Quadratic equations

IV. Arithmetic progression

V. Triangles and Circles

VI. Mensuration

VII. Statistics

VIII. Trigonometry

IX. Factors and exponents

	X. Coordinate Geometry XI. Percentage XII. Probability XIII. Profit and loss XIV. Polynomails
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BIOLOGY	I. Life processes a) Photosynthesis b) Digestion c) Excretion d) Circulation and Transportations in plants and animals e) Respiration II. Reproduction in organisms III. Control and Coordination IV. Heredity and evolution V. Our Environment VI. Cell and its structure
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General Ability	10 Questions
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