SYLLABUS FOR PRATHIBHA PRAVEENA EXAMINATION

Subject	Portion
PHYSICS	**1. Mechanics** Force, Different types of forces, Newton's laws of motion, Uniform circular motion, Work, Energy and Power, Law of conservation of energy theorem **II. Optics** Refraction, Reflection, Laws of refraction, Principle of Reversibility, Lateral displacement, 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. **III. Sounds** Reflection of sound waves; Echoes, Forced and natural vibration, Resonance **IV. 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. **V. Electro magnetism** Magnetic effects of current : Oersted's experiment, Rule to find the direction of magnetic field, Solenoid, Electromagnets and parmanets magnets force due to magnetic field on a current carrying conductor and its application in dc motor **VI. Electromagnetic induction and its applications to A.C generator and transformer** **VII. HEAT** Definitions of heat and temperature, Different types of thermometers, Specific heat capacities, principle of method of mixtures, Latent heat, change of phase.

| 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 and Stereochemistry
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)

MATHEMAT	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. Permutation and Combination XII. Probability XIII. Matrices
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 world (Ecology)**