



PRATI KSHA INSTITUTE OF PHARMACEUTICAL SCIENCES

(Under Pratiksha Educational Trust)

Chandrapur Road, Panikhaiti, Guwahati-26, Assam, India

(PIPS ELIGIBILITY TEST)

PET-2019

Pratiksha Institute of Pharmaceutical Sciences proudly presents the first edition of **PET-2019** to assess the eligibility of the students for admission to the B.Pharm and D.pharm courses. The exam would be of fifty (50) marks and would consist of Multiple-Choice Questions (MCQ's).

Exam Schedule:

Course	Date	Time
B. Pharm	8 th June 2019	1-2 PM
D. Pharm	8 th June 2019	1-2 PM

Venue

**Pratiksha Institute of Pharmaceutical Sciences, Panikhaiti, Chandrapur
Road, Guwahati-781026**

SYLLABUS

The Syllabus for PIPS Eligibility Test-2019 (PET-2019) is based on the basic knowledge of the science stream subjects (Physics, Chemistry, Biology or Mathematics) that are a part of the higher secondary course curriculum:

Biology and Mathematics are optional. A student has to answer either Biology or Mathematics part.

A basic and brief idea of the syllabus topics are outlined below:

Subjects	
Physics	<ol style="list-style-type: none"><li data-bbox="459 398 1420 533">1. <u>Units and Measurements</u> Units of measurement; systems of units; SI units, fundamental and derived units. Length, mass and time measurements.<li data-bbox="459 591 1420 725">2. <u>Laws of Motion</u> Intuitive concept of force, Inertia, Newton's first law of motion; momentum and Newton's second law of motion; impulse; Newton's third law of motion.<li data-bbox="459 784 1420 994">3. <u>Work, Energy and Power</u> Work done by a constant force and a variable force; kinetic energy, work-energy theorem, power. Notion of potential energy, potential energy of a spring, conservative forces: conservation of mechanical energy (kinetic and potential energies).<li data-bbox="459 1052 1420 1263">4. <u>Gravitation</u> Kepler's laws of planetary motion, universal law of gravitation. Acceleration due to gravity and its variation with altitude and depth. Gravitational potential energy and gravitational potential, escape velocity, orbital velocity of a satellite, Geo-stationary satellites.<li data-bbox="459 1321 1420 1456">5. <u>Mechanical Properties of Solids</u> Elastic behavior, Stress-strain relationship, Hooke's law, Young's modulus, bulk modulus, shear modulus of rigidity, Poisson's ratio; elastic energy.<li data-bbox="459 1514 1420 1872">6. <u>Optics</u> Reflection of light. Refraction of light, total internal reflection and its applications, Magnification, power of a lens, combination of thin lenses in contact. Scattering of light. Optical instruments: Human eye, image formation and accommodation, correction of eye defects (myopia, hypermetropia, presbyopia and astigmatism) using lenses. Microscopes and astronomical telescopes (reflecting and refracting) and their magnifying powers. Resolving power of microscopes and astronomical telescopes. Polarization, plane polarized light; Brewster's law, uses of plane polarized light and Polaroids.

Chemistry

1. **Chemical kinetics Rate of a reaction (average and instantaneous), factors affecting rates of reaction:**

Concentration, temperature, catalyst; order and molecularity of a reaction; rate law and specific rate constant, integrated rate equations and half life (only for zero and first order reactions); concept of collision theory (elementary idea, no mathematical treatment).

2. **Aldehydes, Ketones and Carboxylic acids Aldehydes and Ketones:**

Nomenclature, nature of carbonyl group. Carboxylic acids: Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses.

3. **Alkanes, Alkenes, Alkynes:**

General naming and nomenclature.

4. **Alcohols, Phenols and Ethers:**

Nomenclature, methods of preparation, physical and chemical properties (primary alcohols only); identification of primary, secondary and tertiary alcohols; mechanism of dehydration of alcohol uses, some important compounds- methanol and ethanol. Phenols: Nomenclature, physical and chemical properties, acidic nature of phenols, electrophilic substitution reactions, uses of phenols. Ethers: Nomenclature, physical and chemical properties, uses.

Biology

1. **Living world:**

Binomial nomenclature. Five kingdoms of life and basis of classification. Salient features of Monera, Protista, Fungi, Animalia and Plantae.

2. **Morphology of Flowering plants:**

Morphology of different parts of flowering plants – Root, stem, inflorescence, flower, leaf, fruit, seed.

3. **Cell-The Unit of Life:**

Structure of prokaryotic and eukaryotic cells; Plant cell and animal cell; Cell envelope, cell membrane, cell wall; Cell organelles - structure and function.

4. **Plant Physiology:**

i. **Photosynthesis in Higher Plants:** Photosynthesis as a mean of autotrophic nutrition; site of photosynthesis, pigments involved in photosynthesis (elementary idea); photochemical and biosynthetic phases of photosynthesis; cyclic and non-cyclic photophosphorylation; factors affecting photosynthesis.

ii. **Plant - Growth and Development:** Phases of plant growth and plant growth rate; conditions of growth; growth regulators - auxin, gibberellin, cytokinin, ethylene, ABA.

5. **Human Physiology:**

i. **Digestion and Absorption:** Alimentary canal and digestive glands, role of digestive enzymes and gastrointestinal hormones; Peristalsis, digestion, absorption and assimilation of proteins, carbohydrates and fats.

ii. **Breathing and Exchange of Gases:** Respiratory system in humans; mechanism of breathing and its regulation in humans - exchange of gases, transport of gases and regulation of respiration, respiratory volume.

iii. **Body Fluids and Circulation:** Composition of blood, blood groups, coagulation of blood; composition of lymph and its function; human circulatory system - Structure of human heart and blood vessels; cardiac cycle, cardiac output, ECG; double circulation; regulation of cardiac activity.

iv. **Excretory Products and Their Elimination:** Human excretory system - structure and function; urine formation; regulation of kidney function; role of other organs in excretion.

v. **Human reproduction:** Parts of female reproductive system, Parts of male reproductive system, Spermatogenesis and Oogenesis, Menstrual cycle.

Mathematics

1. Sets and Functions

- i. Sets
- ii. Relation and Functions
- iii. Trigonometric Functions

2. Algebra

- i. Sequence and Series
- ii. Matrices
- iii. Determinants
- iv. Quadratic Equations

3. Co-Ordinate Geometry

- i. Distance Formula
- ii. Straight lines

4. Calculus

- i. Limits and Derivatives
- ii. Continuity and Differentiability
- iii. Integrals
- iv. Differential Equations

5. Probability and Statistics

Candidates are requested to bring black/blue ball point pen, calculators and other stationery for the same.

***Mobile phones are strictly prohibited inside the examination hall.**

In case of any clarification kindly contact:

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