



# GANDHI INSTITUTE OF TECHNOLOGY AND MANAGEMENT (GITAM)

(Declared as Deemed to be University u/s 3 of UGC Act, 1956)

Visakhapatnam | Hyderabad | Bengaluru

Accredited by **NAAC** with **A++** Grade

Website: [www.gitam.edu](http://www.gitam.edu)

## GITAM SCHOOL OF PHARMACY

### PhD in Pharmacy: Pharmaceutics

### PhD Entrance Test Syllabus - 2023-2024

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#### PhD in Pharmacy: Pharmaceutics

**1. (a) Professional Pharmacy:** Professional Pharmacy, Pharmaceutical jurisprudence including Drugs and Cosmetics Act 1940 and rules 1945. Pharmacy Act 1948, Code of Pharmaceutical ethics. Prescription: definition, various parts of prescription and their functions, handling of prescription, sources of errors, care required in dispensing procedures including labeling of dispensed products, preliminary knowledge of important Latin terms used in the prescriptions and their translation in to English. Posology: Definition, Factors affecting dose selection. Calculation of children and infant doses. Drug regulatory agencies. Concepts on ICH, WHO, FDA, TGA, ISO, GMP, SOP, QBD, Patents etc.

**(b) Physical Pharmaceutics:** States of matter, Physical properties of drug molecules, pH, buffers and isotonic solution, solubility phenomena, surface tension, interfacial phenomenon, Kinetics, Rheology, Micromeritics & powder flow, Diffusion and dissolution, Colloids, Complexation and protein binding

**2. Pharmaceutical Technology:** Principles, Formulation, Ingredients, method of manufacture, evaluation, quality control tests, labeling and packaging of following class of product:  
Solid dosage forms- Tablets, coating, capsules, microcapsules, powders, granules etc.  
Liquid dosage forms- solutions, suspensions, emulsions,  
Semisolid dosage forms- ointment, creams, gels, suppositories,  
Parenterals- injections small volume, large volume, ophthalmic preparations and  
Pre-formulation studies, Stability studies and Pharmacopoeal specifications for various formulations.  
Formulation of cosmetics preparation like lipstick, shampoo, creams, nail preparations and dentifrices, powders etc.

#### **3. Biopharmaceutics and Pharmacokinetics and their importance in formulation.**

Introduction to biopharmaceutics: Drug absorption, distribution, metabolism and elimination. Compartment model- Definition and Scope. Pharmacokinetics of drug absorption - Zero order and first order absorption rate constant. Determination of pharmacokinetic parameters.

Bioavailability and bioequivalence: Measures of bioavailability,  $C_{max}$ ,  $t_{max}$ ,  $K_{el}$  and Area Under the Curve (AUC); Review of regulatory requirements for conducting bioequivalent studies. Biopharmaceutical Classification System (BCS) of drugs.