

MEDI-CAPS UNIVERSITY

Syllabus for Ph.D. Entrance Exam in Pharmaceutical Science

Pharmaceutical Analysis: Principle, instrumentation, and application of the following absorption spectroscopy (UV visible, NMR and IR) and different chromatographic methods (TLC, column, paper and HPLC). Concept of qualitative and quantitative analysis fundamental of volumetric analysis concept of GMP and GLP

Pharmaceutical Chemistry: Basic concept and application of Computer Aided Drug Design (CADD) of important categories Azole derivatives like quinazoline, imidazole, oxadiazole and thiazolidine derivatives.

Pharmacology: General pharmacological principles including- toxicology, drug interaction, Pharmacology of various classes of drugs like CVS, anti-diabetic drugs, chemotherapeutic agents. bioassay, drug -drug interactions, drug -food interaction and adverse drug reactions

Pharmacognosy: Standardization of raw materials and herbal product. Quantitative and qualitative microscopy and modern techniques used for evaluation of crude drugs.

Plant tissue culture- principles and techniques. Fermentation technology and its application in pharmacy. Evaluation of crude drug. Adulteration of crude drugs and their detection methods.

Pharmaceutics: Formulation considerations: application of pre-formulation studies and technologies and steps involved in the formulation of tablets, capsules, parenterals, and semi solid dosage forms and modified dosage forms. Formulation and evaluation of transdermal, mucoadhesive, and targeted drug delivery systems, bioavailability and bioequivalence, pharmacokinetics, IVIVC studies and PK/PD modelling.

