



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

GITAM SCHOOL OF PHARMACY

PhD Entrance Test Syllabus

PhD in Pharmacy: Pharmacognosy & Phytochemistry

Module I: Systematic pharmacognostic study of the following: Carbohydrates and derived products: Agar, guar gum, acacia, Honey, Isabgol, pectin and Tragacanth. Lipids: Bees wax, Castor oil, Codliver oil, Shark liver oil and Wool fat. Resins: Colophony, podophyllum, jalap, cannabis, capsicum, myrrh, asafoetida, balsam of Tolu, balsam of Peru, benzoin, turmeric, ginger. Volatile oils: Mentha, Coriander, Cinnamon, Cassia, Lemon peel, Orange peel, Lemon grass, Citronella, Caraway, Dill, Clove, Fennel, Nutmeg, Eucalyptus, Chenopodium, Cardamom, Sandal wood.

Module II: Study of the biological sources, cultivation, collection, commercial varieties, chemical constituents, substitutes, adulterants, uses, diagnostic macroscopic and microscopic features and specific chemical tests of following groups of drugs. Cardioactive glycosides: Digitalis, squill, strophanthus and thevetia, Anthraquinones: Aloe, senna, rhubarb and cascara, Alkaloid containing drugs: Pyridine-piperidine: Tobacco, areca and lobelia. Tropane: Belladonna, hyoscyamus, datura, duboisia, coca and withania. Quinoline and Isoquinoline: Cinchona, ipecac, opium. Indole: Vinca alkaloids, Ergot, rauwolfia, catharanthus, nux-vomica and physostigma. Steroidal: kurchi. Purines: Coffee, tea and cola.

Module III: Selection of plant materials, claims of folklore on traditional systems, Authentication of plant materials by various organizations. Extraction methods of plant materials, chromatographic techniques (TLC, HPTLC, and LCMS) of plant constituents, characterization of the isolates by spectroscopy techniques (UV, IR, NMR and Mass). Methods of isolation of volatile oils and their identification & Chemical identification of plant constituents



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Module IV: WHO Guidelines for the assessment of crude drugs: Evaluation of identity, quality and purity of crude drugs. Alternative system of medicine: Principles of Ayurveda, Homeopathy and Unani system of medicines, their merits and demerits. Methods of improving quality of crops and their application. Plant tissue culture techniques. Applications of plant biotechnology in Pharmacy. Indian and International patent laws, proposed amendments as applicable to herbals/natural products and processes.