



VIJAYANAGARA SRI KRISHNADEVARAYA UNIVERSITY

Jnanasagara campus, Ballari.-583105

Semester – III: Skill Course B1: Phytochemistry and Pharmacognostic studies

Course Title:: Phytochemistry and Pharmacognostic studies	Course Code: 24MJBOTC3S
Total Contact Hours: 30	No. of Credits: 02
L:T:P = 1:0:2	
Internal Assessment Marks: 10	Duration of SEE: 1 Hrs 30 min
Semester End Exam Marks: 40	

Course Outcomes (COs):

On completion of this course, the students will be able to:

- to know the techniques in the cultivation and production of crude drugs
- to know the crude drugs, their uses and chemical nature
- know the evaluation techniques for the herbal drugs
- to carry out the microscopic and morphological evaluation of crude drugs...

Unit	Description	Hours
1	<p>Introduction to Pharmacognosy</p> <p>(a) Definition, history, scope and development of Pharmacognosy (b) Sources of Drugs – Plants, Animals, Marine & Tissue culture (c) Organized drugs, unorganized drugs (dried latex, dried juices, dried extracts, gums and mucilages, oleoresins and oleo- gum -resins).</p> <p>Classification of drugs: Alphabetical, morphological, taxonomical, chemical, pharmacological, chemo and sero taxonomical classification of drugs Quality control of Drugs of Natural Origin: Adulteration of drugs of natural origin. Evaluation by organoleptic, microscopic, physical, chemical and biological methods and properties.</p>	10
2	<p>Cultivation, Collection, Processing and storage of drugs of natural origin: Cultivation and Collection of drugs of natural origin Factors influencing cultivation of medicinal plants. Plant hormones and their applications. Polyploidy, mutation and hybridization with reference to medicinal plants. Conservation of Medicinal plants</p> <p>Pharmacognosy in various systems of medicine: Role of Pharmacognosy in allopathy and traditional systems of medicine namely, Ayurveda, Unani, Siddha, Homeopathy and Chinese systems of medicine.</p>	09
5	<p>Primary metabolites: General introduction, detailed study with respect to chemistry, sources, preparation, evaluation, preservation, storage, therapeutic used and commercial utility as Pharmaceutical Aids and/or Medicines for the following</p>	

<p>Primary metabolites: Carbohydrates: Acacia, Agar, Tragacanth, Honey Proteins and Enzymes: Gelatin, casein, proteolytic enzymes (Papain, bromelain, serratiopeptidase, urokinase, streptokinase, pepsin). Lipids(Waxes, fats, fixed oils) : Castor oil, Chaulmoogra oil, Wool Fat, Bees Wax Introduction to secondary metabolites: Definition, classification, properties and test for identification of Alkaloids, Glycosides, Flavonoids, Tannins, Volatile oil and Resins</p> <p>Analysis of crude drugs by chemical tests: (i)Tragacanth (ii) Acacia (iii)Agar (iv) Gelatin (v) starch (vi) Honey (vii) Castor oil</p> <p>Determination of stomatal number and index</p> <p>Determination of vein islet number, vein islet termination and palisade ratio.</p> <p>Determination of size of starch grains, calcium oxalate crystals by eye piece micrometer</p> <p>Determination of Fiber length and width</p> <p>Determination of number of starch grains by Lycopodium spore method</p> <p>Determination of Ash value</p> <p>Determination of Extractive values of crude drugs</p> <p>Determination of moisture content of crude drugs</p> <p>Determination of swelling index and foaming</p>	11
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Text Books for Reference:

1. W.C.Evans, Trease and Evans Pharmacognosy, 16th edition, W.B. Saunders & Co., London, 2009.
2. Tyler, V.E., Brady, L.R. and Robbers, J.E., Pharmacognosy, 9th Edn., Lea and Febiger, Philadelphia, 1988.
3. Text Book of Pharmacognosy by T.E. Wallis
4. Mohammad Ali. Pharmacognosy and Phytochemistry, CBS Publishers & Distribution, New Delhi.
5. Textbook of Pharmacognosy by C.K. Kokate, Purohit, Gokhlae (2007), 37th Edition, Nirali Prakashan, New Delhi.
6. Herbal drug industry by R.D. Choudhary (1996), 1stEdn, Eastern Publisher, New Delhi.
7. Essentials of Pharmacognosy, Dr.SH.Ansari, 1st edition, Birla publications, New Delhi, 2007
8. Practical Pharmacognosy: C.K. Kokate, Purohit, Gokhlae 9. Anatomy of Crude Drugs by M.A. Iyengar

Examination pattern:40 Multiple Choice Questions for 40 Marks (OMR Based)
