

BHARATHIDASAN UNIVERSITY, TIRUCHIRAPPALLI - 620 024

One Year Diploma in Herbal Medicine

(For the candidates to be admitted from the academic year 2006-2007 onwards)

Seme ster	Title of the Paper	Exam. Hours	University Exam. Marks
I	Paper I– Taxonomy and Cultivation of Medicinal Plants	3	100
	Paper II – Ethano Medicine	3	100
	Paper III – Practicals covering the courses I, II, IV & V (Practical examination at the end of the II semester)	3	100
II	Paper IV – Pharmacognosy	3	100
	Paper V – Herbs and Drug Action	3	100
	Paper VI – Project and Viva-voce	-	75 + 25
	TOTAL MARKS		600

Eligibility : Pass in +2

Practical / Field experience or training shall also be conducted in the relevant areas.

Project: Simple project work is to be given and dissertation to be submitted at the end of the course. This is to be valued for 75 marks and 25 marks for viva-voce examination.

PAPER I – TAXONOMY AND CULTIVATION OF MEDICINAL PLANTS

Unit I

Introduction to Medicinally important Plant parts: Fruits, Leaves, Stem and its modifications (underground and aerial), Roots.

Unit II

Plant identification – Elementary knowledge of Binomial nomenclature – Outline of Bentham and Hooker classification – Herbarium techniques.

Unit III

Study of some medicinally important families with reference to systematic position. Diagnostic features and medicinal uses only: Meliaceae, Myrtaceae, Apiaceae, Asclepiadaceae, Solanaceae, Lamiaceae, Euphorbiaceae, Zingiberaceae, Musaceae and Poaceae.

Unit IV

Cultivation methods – Crop protection – Harvesting – Storage and Protection – Marketing and utilization - Export of medicinally important (General aspects).

Unit V

Endangered Plants – Conservation: Exsitu and Insitu methods – Importance of Red data book (IUCN) – Patenting and IPR.

Practicals:

1. Identification and Medicinal value of locally available medicinal plants.
2. Morphology of the useful parts
3. Vegetative propagation methods (for spotters).

References:

1. Gokhale, S.S., C.K.Kokate and A.P. Purohit (1994) Pharmacognosy. Nirali Prakashan. Pune.
2. Tyagi, Dinesh Kumar (2005) Pharma Forestry. Field Guide to Medicinal Plants. Atlantic Publishers and Distributors, New Delhi.
3. Farooqi, A.A., and B.S. Sreeramu (2004). Cultivation of Medicinal and Aromatic Crops. University Press (India) Pvt. Ltd., Hyderabad.
4. Singh & Jain (1985) Taxonomy of Angiosperms. Rastogi Publications, Meerut.

PAPER II – ETHNO MEDICINE

Unit I

Ethnomedicine – definition, history and its scope – Inter disciplinary approaches in ethnobotany – Collection of ethnic information.

Unit II

Importance of medicinal plants – role in human health care – health and balanced diet (Role of proteins, carbohydrates, lipids and vitamins).

Unit III

Tribal medicine – methods of disease diagnosis and treatment – Plants in folk religion – *Aegle marmelos*, *Ficus benghalensis*, *Curcuma domestica*, *Cyanodon dactylon* and *Sesamum indicum*.

Unit IV

Traditional knowledge and utility of some medicinal plants in Tamilnadu – *Solanum trilobatum*, *Cardiospermum halicacabum*, *Vitex negundo*, *Adathoda vasica*, *Azadirachta indica*, *Gloriosa superba*, *Eclipta alba*, *Aristolochia indica*, *Phyllanthus fraternus* and *Boerhaavia diffusa*.

Unit V

Plants in day today life – *Ocimum sanctum*, *Centella asiatica*, *Solanum trilobatum*, *Cassia auriculata*, *Aloe vera*. Nutritive and medicinal value of some fruits (Guava, Sapota, Orange, Mango, Banana, Lemon, Pomegranate) and vegetables - Greens (*Moringa*, *Solanum nigrum*) Cabbage.

Reference:

1. Ethnobiology – R.K.Sinha & Shweta Sinha – 2001. Surabhe Publications – Jaipur.
2. Tribal medicine – D.C. Pal & S.K. Jain 1998, Naya Prakash, 206, Bidhan Sarani, Calcutta – 700 006.
3. Contribution to Indian ethnobotany – S.K. Jain 1995, 3rd edition, Scientific publishers, P.B.No. 91, Jodhpur, India.
4. A Manual of Ethnobotany – S.K.Jain, 1995, 2nd edition.

Practical:

Field study of Herbal preparation of

1. *Aristolochia indica*
2. *Azadirachta indica*
3. *Boerhavea diffusa*
4. *Vitex negundo*
5. *Phyllanthus fraternus*

Paper III – Practicals covering the courses I, II, IV & V
(Practical examination at the end of the II semester)

PAPER IV – PHARMACOGNOSY

Unit I

History, Definition and scope of pharmacognosy; Systems of Indian Medicines – Siddha, Unani, Ayurveda, Homeopathy; Terminologies.

Unit II

Classification of Crude drugs – Taxonomical, Morphological, Pharmacological and chemical classifications; Chemistry of drugs and its evaluation.

Unit III

Preparation of crude and commercial drugs. Making infusion, decoction, lotion, washers, insectepellents, suppositories, tincture, making herbal syrups, compresses, poultice, plasters, ointments, herbal oils and herbal salves. Surgical fibres, sutures and dressing.

Unit IV

Organoleptic study of the following medicinal plants: Fruit – Amla, Bulb – Garlic, Rhizome – Ginger, seed – castor, Bark – Cinchona, Leaves – Neem and Flower – Clove.

Unit V

Analytical Pharmacognosy – drug adulteration and detection. Biological testing of herbal drug. Phytochemical investigations with reference to secondary metabolites of locally available medicinal plants.

Practical:

1. Histo – anatomical analysis of crude powder drug of locally available medicinal plants.
2. Study of organoleptic parameters of the plants prescribed in the syllabus.

References:

1. Pharmacognosy, S.B.Gokhale, Dr.C.K. Kokate, A.P. Purohit
Publisher: Nirali Prakasham, Pune.
2. Herbs that Heal, Acharya Vipul Rao – Diamond Pocket Books, New Delhi.
3. Practical Pharmacognosy. Dr.C.K. Kokate et al.
4. Phytochemical methods, Horborne.
5. An Introduction to Medicinal Botany and Pharmacognosy – N.C. Kumar, Emkay Publications, Delhi.

PAPER V – HERBS AND DRUG ACTION

Unit I

Terminologies – Definitions – Classification of medicinal plants based on their effects – Ecological status with special reference to India.

Unit II

Allergens – types – sources – active principles – Chemical nature – Cell modifiers – Lectins – mutagens, teratogens – Allergic reactions with known examples.

Unit III

Drugs acting on brain and nervous system – Rheumatic arthritis – Psychoactive drugs – Depressants, Stimulants, hallucinogens – sources, effects, basic mechanism of action.

Unit IV

Cardiovascular diseases – blood pressure – cardiac drugs of plant origins – alkaloids, anticoagulants – basic mechanism of action. Pulmonary / respiratory disorders – asthma – bronchitis – common cold – allergy – Remedy from plants.

Unit V

Drugs for urinogenital disorders – roots of *Withania somnifera* – Memory stimulants – *Centella asiatica* – Drugs for dissolving kidney stones – *Musa paradisiaca* (pseudostem) – Antiinflammatory drugs – *Cardiospermum* – Anticancer drugs – *Catharanthus roseus*.

Practical:

- Poisonous plants – Toxic protein from *Abrus*
 - Aconitin – from roots of *Aconitum*
 - Strychnine – from seeds of *strychnos*
 - Nicotin – from leaves of *Nicotiana*
 - Alkaloids – from members of *solanaceae*
- Asthma – Allergy – Pollen & allergy
- Role of lectins
- Anticancer drug from *Catharanthus roseus*
- Depressants – opium (*Papaver somniferum*)
- Stimulants – *Strychnos nux* – *vomica*, *Coffea arabica*
- Blood pressure – *Digitalis purpurea*; *Ephedra*; *Atropa belladonna*; *Claviceps purpurea*
- Diuretic properties.

Reference Books:

1. Kumar, N.C. (1993). An Introduction to Medical botany and Pharmacognosy. Emkay Publications, New Delhi.
2. Rao, A.P. (1999). Herbs that heal. Diamond Pocket Books (P) Ltd., New Delhi.
