



Shri Gajanan Maharaj Shikshan Prasarak Mandal's
SHARADCHANDRA PAWAR COLLEGE OF PHARMACY
DUMBARWADI. (OTUR), TAL : JUNNAR, DIST : PUNE. 412409.

Code: SPCOP/ACD/FM/01	Department : Academic	Ac. Yr. : 2020-21
Rev:00	PRACTICE SCHOOL	Class: B. Pharm. (Sem. VII)
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Scope: The main purpose of practice school is to impart the students the knowledge of medicinal plant authentication, how to isolate and identify and produce herbal compounds industrially, how the herbal medicines are produced from crude drugs/ plant materials, how to evaluate plant based products and basic understanding of herbal drug industry operations.

Objectives:

- i. Correct identification and authentication of plant/ plant material
- ii. Knowledge of botanical characteristics features of plant material
- iii. Study of Macroscopic and microscopic features of plant material
- iv. Assurance of quality of raw material for quality of traditional/modern medicine.

Module-I Botanical Pharmacognosy (Classical Pharmacognosy)

A) Selection of Plant: Explain with Example

- i) Based on Disease
- ii) Based on Traditional literature
- iii) Based on Chemical nature/Phytoconstituents
- iv) Based on literature survey
- v) Based on Tribal Use

B) Collection of the Plant/ Plant Material

- i) Methods of collection of different plant parts with examples.
- ii) Season and Time of collection and its importance.
- iii) Method of storage, processing for storage.



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- iv) WHO guidelines for Good collection and storage practices.

C) Identification/ Authentication of plant/ Plant Material

- i) Morphological identification**
- ii) Types of classification, Study of Taxonomy.
- iii) Study of morphology of various plant parts.
- iv) Microscopic identification**
- v) Study of types of plant tissue
- vi) Processing of plant material for section cutting.
- vii) Study of section cutting and staining methods.
- viii) Preparation of permanent slides.
- ix) Use of microtome.

D) Physicochemical Investigation.

- i) Introduction to physicochemical parameters.
- ii) Methods of determination of various physicochemical parameters.
- iii) Significance of each parameter.

Module-II Extraction and Phytochemical Investigation

A) Drying of plant Material

- i) Importance of drying
- ii) Methods of drying
- iii) Use of fresh plant material and its importance

B) Pulvarization

- i) Significance
- ii) Study of powder characteristics

C) Extraction

- i) Methods of extraction with their significance.

D) Phytochemical investigation of extract



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Module-III Identification and Isolation

- A)** Methods of fractionation and their significance.
- B) Chromatography**
 - i)** Types of chromatography
Polarity index,
Study of various types of chromatography (TLC, Colum, HPLC, HPTLC, Flash, SCF)
- C) Isolation, Purification, Quantification**
 - i)** Preparative Chromatography
- D) Identification**
 - i)** Phytochemical tests, Confirmatory tests.
 - ii)** Spectroscopy (UV, IR, Mass, NMR)
 - iii)** Structural illucidation (Case Study)

Module-IV Herbal Formulation and Development

- A) Preformulation study**
- B) Study of various Herbal / Ayurvedic Dosage forms**
Method of preparation and evaluation of
 - i)** Solid dosage forms
 - ii)** Semisolid dosage forms
 - iii)** Liquid dosage forms
- C) Herbal Cosmetics**
Method of preparation and evaluation of
 - i)** Hair care products (Shampoo, Conditioner, Colorant etc.)
 - ii)** Skin care products (Creams, Lotions, Lipstick, Powder, Face pack.)
- D) Herbal Excipients**



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- i) Diluent,
- ii) Coloring agent
- iii) Flavouring agent
- iv) Suspending agent
- v) Binders etc.

Module-V Herbal Novel Drug Delivery System

A) Methods of preparation and evaluation of

- i) Phytosomes
- ii) Liposomes
- iii) Neosomes
- iv) Microspheres
- v) Nanoparticals
- vi) Ethosomes

Module-VI Preclinical Study

A) Biological Evaluation (Animal Study) of

- i) Extract
- ii) Isolated fraction/ Lead compound
- iii) Formulation
- iv) Cosmetic preparation

B) Microbiological Evaluation

(Study of various In-vitro, In-Vivo and Ex-Vivo animal Models for pharmacological study.)