

## **MODULE : 5-GUNAPADAM (MOOLIGAI, THATHU & JEEVAM)**

### **MOOLIGAI**

1. Panchabootha-compositions of raw materials (Substance) definition of raw materials and its scope.
2. Pharmaco - therapeutically classification (according to various Siddha texts)
3. Nomenclature and synonym based identification of classical drugs and their importance in identifications and characterization.
4. Family wise botanical identification (macroscopic) with differentiate among important plants of the family and practical demonstration.
5. Useful parts of plants and use of alternative parts and substitute plant drugs in the formulations and their standardization.
6. Therapeutic uses of puranaranth for challenging modern diseases like diabetic ulcer, varicose vein etc.,
7. Knowledge on quality standards of medicinal plants of Siddha. i.e. macroscopic and microscopic description of useful chemical constitutes, the identity test, analytical method, HPLTC, Qualitative standards, biological markers, pharmacology, pharmacognosy.
8. Pharmacognosy of powdered drugs.
9. Scientific understanding of rasa, guna, veeriya, vipaka and prabhava and objective parameters, if any, and recent research results. Clinical application of panchabootham.
10. Administration of drug, dosage, incompatibility, time of administration, anupanam and its importance.
11. Siddha formulation of India and study on important population compound formulations of Siddha.
12. Knowledge of Siddha pharmacopoeia of India and other pharmacoforem.

13. Knowledge on publication of CSIR, ICMR and other scientific institutions on medicinal plants
14. Cultivation and propagation of common medicinal plants
15. Collection and preservation storage technique of medicinal plants, preparation of herbarium and museum specimens.
16. List of best herbaria, museums and gardens all over the country.
17. List of good scientific journals publishing articles on medicinal plants.
18. National medicinal plants bases, knowledge on Agricultural practices of medicinal plants.
19. Awareness or genetically modified medicinal plants commonly used in Siddha and hazards.
20. Nutraceuticals and food supplements.
21. Obtaining method of plant derivatives
22. Parts of the plant need in Siddha preparation
23. Importance of learning pathgunapathu of mooligaikal given in Siddha literatures.
24. Medical proverbs and its significance.
25. Plants used in modern system of medicines and examples.
26. Heavy metal contamination of plants and plant materials and its permissible limits as per WHGO guidelines.
27. Schemes AYUSH, DST, ICMR, CSIR etc
28. Conservation of medicinal plants
29. Banned drugs 'm' international marketing

## **THATHU AND JEEVAM**

1. Panchathathu composition of raw materials (substance) definition of raw materials and its scope.

2. Pharmaco – therapeutical classification according to various Siddha texts.
3. Nomenclature and synonym based identification of classical drugs and their importance in identification and characterization.
4. An introduction about thathu like metals kaarasaram, padanam and warasan and its types.
5. Learning the pancha thathu composition of thathu by various Siddha literatures.`
6. Therapeutic uses of Pura marunthu for challenging modern diseases like diabetic ulcer, varicose vein etc.
7. Scientific understanding of rasa, guna, virya vipaka and prabhava and objective parameters if any and recent research results clinical application of Pancha Bootham
8. Administration of drug dosage incompatibility, time of administration anupanam and its importance.
9. Siddha formulasy of India and study on important / popular compound formulations of Siddha.
10. Knowledge of Siddha pharmacopoeia of India and other pharmacopoeias.
11. List of best herbaria, museums and gardens all over the country.
12. Neutraceuticals and food supplements
13. Metals and padamams
14. Artificial preparation of minerals
15. Banned drug.

### **PHARMACY: Planning for pharmacy**

1. Explanation of karuvi (Instruments) for preparing the medicines.
2. Explain the types of karuvi and demonstrate their structures and uses.
3. Learning the importance of special instruments of Siddha system at medicine.

4. Introduction about pori (enthirangal) and its various types like avi enthiram, thulai enthiram, thooba enthiram, mezhugu thyla enthiram, kuppi puda karuvi etc.,
5. Demonstration of enthirangal and its importance for preparing medicines.
6. Specific preparations like soyaneer, thiravagam by using particular enthirangal.
7. Teaching methodology and types of Akamarunthu (like surasam, saaru, kudineer, karkam, ukkali etc) and its preparations. Expiry and their uses.
8. Teaching methodology of types of puramarunthu (like kattu, patru, otradam, poochu, pukai, salakai, suttikai, peeche etc) its preparations expiry and direction for application.
9. Pharmacology comparison between Siddha mode of action and receptor pathways of action of drugs principles of general pharmacology, correlation of various drug actions
10. Nanju Drugs: Siddha methods of purification of drugs and study of changes and their assessment toxicity studies and their standardization, therapeutic category and safety aspect.
11. Incompatibility of food and drug and their toxic manifestations.
12. Drugs and cosmetic act 9140- Introduction and its importance, misbranded, alternated and spurious drugs, various amendments to drugs in act.
13. Workable knowledge on Intellectual Property Rights (IPR) and patent law.
14. Mineralogical analysis of minerals, metals and other source material i.e. assessment of physical and optical characteristics, spectro-chemical analysis involving optical absorption, fluorescence and atomic spectroscopy basics of chemistry.
15. Research in pharmacy and pharmaceutical sciences
  - a. Research organization
  - b. WHO guidelines on research in Herbal and Herbo mineral drugs.
  - c. Review of selected research papers on Siddha drugs specific to pharmacy and pharmaceutical sciences
  - d. Raw materials storage – GMP guidelines

- e. Quality raw materials as per WHO guidelines
16. Principles of pharmaceutical processing – mixing, milling drying, compressing and consolidation of powdered solids, classification and filtration.
17. Statistical applications in pharmaceutical sciences
18. Pharmaceutical dosage forms
- a. Tablets, capsules and other solids dosage forms
  - b. Liquids
  - c. Semisolids
  - d. Suspensions and emulsions
  - e. Pre-formulations – factor affecting formulation
  - f. Medicines and materials like kaaranool used in the treatment of various disease of kan-maruthuvam, aruvai maruthuvam, varmam and thokkanam.
19. Product processing packaging, evaluation and regulations
- a. Packaging material science
  - b. Production management
  - c. QC and QA
  - d. Regulatory affair related to food drug and cosmetics, Prevention of Food Adulteration Act (PFA), drugs and cosmetics act 1940, drugs and cosmetics rules 1945.
20. Pharmaceutical testing. Analysis and control
- a. analysis of medicine
  - b. Biological testing
  - c. Organization of Economical and Commercial Development (OECD) guidelines for acute OECD 407 and chronic 408 toxicity studies and other related guidelines
  - d. Clinical analysis
  - e. Chromatography
  - f. Instruments methods of analysis

g. Shelf life studies

21. General principles of pharmacodynamics and pharmacokinetics including receptor theories.
22. Review of paripam, chenduram and its processing and latest development
23. Principles of Siddha drug formulation
24. Traditional Health Medicinal Product Directive (THMPD) and other international regulations related to Siddha drugs.
25. Pharmaco-vigilance in Siddha and modern medicine selection of drugs in disease, drug-drug reaction, adverse drug reaction dosage excesses and their effects.
26. Information resources in pharmacy and pharmaceutical sciences.
  - a. Pharmaceutical databases
  - b. Pharmaceutical abstracts
  - c. Pharmacopeias and formulates
  - d. Resources on internet – World Wide Web, Search Engines, Search Directories, Major pharmacy websites, Electronic publications.
  - e. Research journals in pharmacy and pharmaceutical science.
27. Awareness regarding medico legal aspects, right to information act of day to day Gunapadam practice.