

Syllabus
for Courses affiliated to the
Kerala University of Health Sciences
Thrissur 680596



SIDDHA MARUTHUVA ARIGNAR
(BACHELOR OF SIDDHA MEDICINE
AND SURGERY-B.S.M.S.)

Course Code 005

(2017-18 Academic year onwards)

2017

2 COURSE CONTENT

2.1 Title of course:

Siddha Maruthuva Arignar (Bachelor of Siddha Medicine and Surgery-B.S.M.S.)

The candidate shall be awarded Siddha Maruthuva Arignar (Bachelor of Siddha Medicine and Surgery-B.S.M.S.) degree after passing all the examinations and completion of the course of study extending over the period and the compulsory rotatory internship extending over twelve months.

2.2 Objectives of course

The Bachelor of Siddha education should aim at producing graduates of profound scholarship having deep basis of Siddha with scientific knowledge in accordance with fundamentals with extensive practical training so as to become efficient teachers, research scholars, physicians and surgeons of Siddha system, fully competent to serve the healthcare services of the country.

2.3 Medium of instruction:

Medium of instruction shall be English (except for the Tamil Language Paper)

2.4 Course outline

Four and half years course plus one year internship. 13 Departments and 19 subjects to be taught.

2.5 Duration

The duration of the course shall be five years and six months comprising:—

First Professional - Twelve months

Second Professional - Twelve months

Third Professional - Twelve months

Final Professional - Eighteen months

Compulsory Rotatory Internship - Twelve months.

2.6 Subjects

Table 1

Name of the subject	Number of hours of teaching		
	Theory	Practical or Clinical	Total
First Professional			
1. Siddha Maruthuva Adippadai Thathuvangalum Varalarum [History and Fundamental Principles of Siddha Medicine]	150	---	150
2. Tamil Language applicable as per clauses (c) and (d) of regulation 1.1 relating to eligibility for admission	100	---	100
3. Communicative English	100	---	100
4. Uyir Vedhiyiyal (Bio-Chemistry)	150	100	250
5. Maruthuva Thavara Iyal (Medicinal Botany and Pharmacognosy)	200	100	300
6. Nunnuyiriyal (Micro Biology)	100	100	200
Second Professional			
1. Udal Koorugal (Anatomy) - Paper I & II	200	150	350
2. Udal Thathuvam (Physiology) – Paper I & II	150	100	250
3. Gunapadam- Marunthiyal (Pharmacology) – Paper I – Mooligai (Materia Medica – Plant Kingdom) & Paper II – Thathu & Jeevam (Materia Medica – Metals, Minerals & Animal Kingdom)	200	100	300
4. Gunapadam – Marunthakaviyal (Pharmaceuticals) – Paper I & II	200	100	300
Third Professional			
1. Noi Naadal - Paper I (Siddha Pathology)	200	100	300
2. Noi Naadal - Paper II (Principles of Modern Pathology)	150	100	250
3. Noi Anugavidhi Ozhukkam (Hygiene and Community Medicine including National Health Policies and Statistics).	100	---	100
4. Sattam Saarntha Maruthuvamum Nanju Maruthuvamum (Forensic Medicine and Toxicology)	150	100	250
5. Research Methodology and Medical Statistics	100	--	100

Name of the subject	Number of hours of teaching		
Final Professional			
1. Maruthuvam (Medicine)	150	200	350
2. Varmam, Puramaruthuvam and Sirappumaruthuvam (Varmam Therapy External Therapy and Special Medicine)	150	200	350
3. Aruvai, Thol Maruthuvam (Surgery including dentistry and Dermatology)	150	200	350
4. Sool, Magalir Maruthuvam (Obstetrics and Gynaecology)	100	175	275
5. Kuzhanthai Maruthuvam (Paediatrics)	100	175	275

Note 1:- Clinical training to the students shall start from the commencement of third professional session onward.

Note 2:- The clinical training to the students in the hospital attached with college

2.7 Total number of hours

As shown in Table 1

2.8 Branches if any with definition

Not applicable for UG Courses

2.9 Teaching learning methods

Class room lecture, tutorial, seminar, group discussion, practical/ clinical training etc.

2.10 Content of each subject in each year

SYLLABUS FOR FIRST PROFESSIONAL B.S.M.S.

1. SIDDHA MARUTHUVA ADIPPADAI THATHUVANGALUM VARALAARUM (HISTORY & FUNDAMENTAL PRINCIPLES OF SIDDHA MEDICINE)

Total Hours : 150

I. Three primordial, eternal entities and their siddhaanthic theories (Pathi, Pasu, Paasam).

(1) Pathi (Almighty): (5 hours)
0 Definition and description of Pathi, existence of Pathi based on Epistemology (Alavai).
1 Nine divine manifestations of Pathi (Thirumenikal). i.e.

1) Sivam 2) Sakthi 3) Naatham 4) Vindhu 5) Sadaasivam 6) Maheswaran 7) Ayan
8) Ari 6. Aran.

c) Five divine powers of Pathi:-
0 Paraasakthi 2) Aadhisakthi 3) Gnaana Sakthi 4) Itchaa Sakthi 5)
Kriyaasakthi. d) Study of cosmic play (Thirukoothu).

1
(2) Pasu (Soul): (5 hours)
Definition and description of Pasu, i.e., distinction between pathi and pasu -
three kinds of soul - seven kinds of creation - four kinds of birth -
Tholkaappiyer's classification based on senses.

(3) Paasam (Bondages): (5 hours)
Definition, description and classification
i.e., Aanavam, Kanmam, Maayai and Thriodaanam
Classification of Maayai:-

Sutha Maayai: (Siva thathuvam) -5, Pure evolutes of
Maayai: Sivam - Sakthi - Sadaasivam - Easwara -
Sudhavidhai.

Asutha Maayai: (Vidyaa thathuvam) - 7 - Impure evolutes of
Maayai: Kaalam - Niyathi - Kalai - Araagam - Vidhai - Puruden -
Maayai.

Prakruthi Maayai: (Aanma Thathuvam) – 24, peculiar properties of soul:
Thanmathirais -5, Bootham -5, Gnana indriyam -5, Kanmendriyam-5,
Anthakaranam-4.

II. Deekai (Initiation towards the highest goal of life). (5 hours)
a) Samaya Deekai b) Vishesha Deekai c) Niruvaana Deekai.

III. Epistemology (Alavai) - 10 types. Clinical Application – 5 Examples. (10 hours)

1) Perception (kaandal), 2) Inference (Karuthal), 3) Testimony (Urai), 4) Non-existence (Abaavam), 5) Deduction (Porul), 6) Analogy (Oppu), 7) Inference by exception (Ozhibu), 8) Co-existence (Unmai), 9) Tradition (Iytheekam), 10) Natural inference (Iyalbu).

IV. Different schools of thought regarding the creation of Universe - (5 hours)

Relation between macrocosm and microcosm (Andathil Ullathe Pindam).

V. Five element theory (Iymbootha Kolgai). (5 hours)

Creation of five elements - Properties of five elements - fivefold combination and its description (Panchabootha Panchikaranam) - application of five element theory in Siddha treatment aspect.

VI. 96 Fundamental Principles (Thathuvams) and its different concepts (15 hours)

Sivaprakaasa Kattalai - Thirualavai Kattalai - Siddhaanta Kattalai - Vedaantha Kattalai - Thathuva Deepikai - Yugimuni's concept.

Bootham - 5 (five elements) - Pori - 5 (Sense organs) - Pulan - 5 (Perception by the sense organs) - Kanmendriyam - 5 (Motor organs) - Gnana Indriyam - 5 (The inner mechanism responsible for the perception of five senses) - Karanam - 4 (four intellectual faculties) -

Arivu - 1 (Self-realization) - Naadi - 10 (Vital channel) - Vaayu - 10 (Vital forces) - Aasayam - 5 (Visceral cavities) - Kosam - 5 (fivesheeths) - Aathaaram - 6 (Six stations of soul) - Mandalam - 3 (Three regions) - Malam 3 (Three principles of moral evil) - Thodam - 3 (Three humours) - Eadanai - 3 (Three physical bindings) - Gunam - 3 (Three cosmic qualities) - Vinai - 2 (Acts) - Raagam - 8 (Eight passions) - Avasthai - 5 (Five states of consciousness).

VII. Three humoral theory (Uyir Thaathukkal) : (15 hours)

Vali, Azhal and Iyam.

Predominant locations - Properties - Physiological functions - Abnormal functions - Increased and decreased features

VIII. Seven Physical constituents (Udal Kattukal) : (5 hours)

Saaram (Primary nourishing juice) - Chenneer (blood) - Oon (muscle) - Kozhuppu (fat) - Enbu (Bone) - Moolai (Bone marrow) - Suckilam / Suronitham (Sperm / Ovum).

Description about 7 physical constituents i.e., Normal function, increased and decreased features.

IX . Five basic properties of Drug: (5 hours)

Suvai (Taste) - Gunam (Characters) - Veeriyam (Potency) - Vibaavam (post absorptive tastes) - Prabaavam (Specific action).

Taste- relations with five elements- features of imbalanced intake of six tastes. Maruthugalin vagaipaadugal with examples

X. Definition and description of the following:- (15 hours)

1. Attamaa Sithigal
2. Thirukkural (Marunthu Athikaram)

3. Rasavaatham (Alchemy).
4. Muppu.
5. Kaayakalpam (Elixir Science).

XI. History of Tamil Nadu including three Tamil Academies & Ancient Religious Traditions of Tamils (Arusamaiyakolgai) (10 hours)

XII. Chuvadi Iyal.

A. MANUSCRIPTOLOGY (20 hours)

Introduction to Manuscriptology
History of Editing Palm leaf Manuscripts with special reference to Tamil
Palm leaf Manuscripts and Paper Manuscripts Editing
Application of Computer in Editing

B. EDITING (15 hours)

Basics of Book Editing
History of Book publishing with special reference to Tamil
Proof Reading - Lay out
Book Production, Use of Computer in Editing

C. PROJECT WORK

Candidates shall have to undertake a field work regarding copying of Inscriptions or Editing a Palm leaf Manuscript or Editing a Paper Manuscript. The project work has to be submitted to the Head of the Department.

XIII. History of Siddhars:- (5 hours)

Agasthiyar - Thirumoolar - Theraiyar - Yugimuni - Bohar - Sattamuni - Nandhidevar - Raamadevar - Dhanvanthri - Konganavar - Karuvloorar - Kaalanganadhar - Pulippaani - Paampaatti Siddhar - Macchamuni - Romarishi - Koorakkar - Idaikaadar - Sundaraanandhar - Thiruvalluvar - Agappei Siddhar - Kuthambai Siddhar - Sivavaakkiaar - Azhuganni Siddhar - Pulathiar.

XIV. Attaanga Yogam:- (5 hours)

Iyamam - Niyamam - Aasanam - Pranaayaamam - Prathiyaakaram - Dhaaranai - Dhiyaanam - Samaadhi.

XV. Encyclopaedia of Siddha Medicine (5 hours)

Reference Books:

S.No.	Name of book, Language, publishers & year of publication	Author
1.	Thotrakirama Araichiyum Siddha Maruthuva Varalarum, (Tamil), The Directorate of Indian Medicine and Homoeopathy, Govt. of Tamilnadu, Chennai. (2005)	Dr.K.S.Uttamarayan, H.P.I.M,
2.	Siddha Maruthuvanga Churukkam (Tamil), The Directorate of Indian Medicine and Homoeopathy, Chennai (2005)	Dr.K.S.Uttamarayan, H.P.I.M,
3.	Siddha Maruthuva Varalaru, (Tamil), International Institute of Tamil Studies, Chennai (2008)	Anaivari Aananthan
4.	Thenindhiya Maruthuva Varalaru, (Tamil) International Institute of Tamil Studies, Chennai (2008)	Ra. Niranjana Devi
5.	Suvatiyyal (Tamil) International Institute of Tamil Studies, Chennai (1991)	Dr. P. Subramanian
6.	Fundamentals of manuscriptology, (English), Thiruvananthapuram Dravidian linguistics association (2003).	Visalakshy, P.
7.	Introduction to Manuscriptology, (English), Sharada Publishing House, Delhi 1996.	R S Shiva Ganeshamurthy
8.	Siddha Medical Manuscripts in Tamil, (English), International Institute of Tamil Studies, Chennai (1984)	Madhavan. V.R
9.	Thamizhil maruthuva ilakiyangal – or aaivu (Tamil) Poonkodi Publications, Chennai Pandai thamizhaga varaivukalum kuriyeedukalum (Tamil)	Dr. R. Vaasudevan
10.	International Institute of Tamil Studies, Chennai (2004) Aasivagam Ennum Tamizhar Anuviyam (Tamil)	Raasu. Pavunthurai
11.	Manitam Pathipagam, Trichy-21 (2013)	Neduncheliyan K
12.	Thamilar Varalaaru, (Tamil) Thamilman Pathippagam, Chennai (2000)	Thevaneya Paavaanar
13.	Siddha Maruthuva Moola Thathuvam (Tamil) Sidha Maruthuvam Valarchi Kazhagam, Jaffna, Srilanka (2002)	S. Sivashanmuga raja
14.	Siddha Dossier, CCRS, Dept. of AYUSH, New Delhi (2013)	

Online Material

1. Tamil Maruthuva Varalattu Thonmaikal, Munaivar R. Vasudevan
<http://ta.wikisource.org/s/bn>

2. Suvadi Iyal Arimukam http://kovaimani-tamilmanuscriptology.blogspot.in/2012_04_01_archive.html
3. Oolai chuvadi Aaivukal- Prof. Dr. R. Madhavan
<http://www.tamilheritage.org/manulogy/madavan.html>
4. Religious Traditions of the Tamils (Prof. A. Velupillai)
<http://tamilelibrary.org/teli2/archives/19>

Other resources

DVD

Historical Atlas of South India : a joint effort of French Institute of Pondicherry and the Tamil University, Thanjavur Reference URL:
<http://www.ifpindia.org/histatlas>

2. TAMIL LANGUAGE

Total Hours : 100

Objective:

To acquire knowledge to understand the contents that is available in classical Tamil Siddha literature.

COURSE CONTENT AND SYLLABUS

Unit : 1 (4 hrs)

Exercises and drills in the spoken and written variety

- a) Alphabets in Tamil
- b) An intensive course in Tamil, CIIL – MYSORE – by Dr.S. Rajaram
- c) Subhramanian V.I. & Veeraswamy T.V., 1973, "Intensive course in Tamil", Dravidian Linguistics Association, Thumba, Trivandrum.

Unit : 2 (10 hrs)

Exercise for Pronunciation

- a) Tamil alphabets – Classification – Special features – Maththirai (Syllabi)
- b) Tamil Words – Loan words – its written form – common words in Tamil and Regional language(viz. Malayalam)

Unit : 3 grammer on the functional level

Formation of words and sentences and study of Basic

(15 hrs)

- a) Chol (word) – Peyar (Name), Vinai (Verb), Idai (clitics) etc.(Peyar (Name) – Gender, number & case; Vinai (Verb)- Kaalam (Tense) Orumai (Singular), Panmai(Plural)
- b) Thodar (syntax)/Vaakkiyam (Sentence), Kaalam (Tense), Orumai (Singular), Panmai (Plural), Ezhuvai

- (Subject), Payanilai (Predicate), Cheyappaduporul (Object). (It is to understand the language structure).
- c) Selected Tamil Proverbs (10)

Unit : 4 Study of selected prose and poetry in Tamil and Siddha literature

POETRY

(24 hrs)

(Poems selected only for reading meaningfully and for memorising)

- a) Name of the book : Malarum maalaiyum Author : Kavimani
 Title : Pasuvum kantrum
 Lines : Thottathil meythu
ka
 ntrukkuty. (2 stanzas)
- b) Pieces from Folk songs (Tamil)
 1) Padaku 2) Elelankadi Elelo
- c) Name of the book :
 Bhaarithiyaar kavithaikal Author :
 Subramaniya Bhaarithiyaar
 Title : Paappaa paattu
 Lines : Odi vilayadu papa
Vazhakkappaduth
 ikkollu papa
 (6 stanzas)
- d) Title : Kontrai venthan (15 Lines)
 Author : Auvaiyaar
- e) Name of the book : Thirukkural Author : Thiruvalluvar
 Title : "Marunthu" Athikaram (10 verses)
- f) Name of the book : Maruthuva vatha
 yoga gnana satthiram Lines : "Aathikaalathilae
 thillayilae
chernthan
 er emaikkaakavae"
- g) Name of the book : Yugichinthaamani
 Lines: "
 Uruthiyam poothathi

uraikkak kela"
- h) Name of the book :
 Author : Chithar Padalkal
 : Kovinthan
 Lines : Thunaichiru..... (27)
 "Ettumalai....." (28)

- j) Name of the book : Thirumanthiram
 Author : Thirumoolar Marunthu
 Title : “ Maruppathu udal noi.....
 :marunthenalamae”
- k) Name of the book : Siddha Maruthuva Chirappu
 Author : Dr. R. Thiagarajan
 Title : Ashtanka yokam
 Lines : “Eyama
maavathumaame”
- l) Name of the book : Siddha Maruthuvaanka Churukkam Dr.
 Author : C.S. Uthamarayan – H.P.I.M.
 Title : Udal Aimpoothakoorupaattaiyum Udaiyathu Enal.
 Lines : “Paarappa.....
Lapamatha Mohamacham”
- m) Name of the book : Siddha maruthuvanka churukkam Dr.
 Author : C.S. Uthamarayan – H.P.I.M.
 Title : Iympootham – Arusuvai thodarpu
 Lines : “Mannudane
uraittha maraiye”
- n) Name of the book : Siddha maruthuvanka churukkam Dr.
 Author : C.S. Uthamarayan – H.P.I.M.
 Title : Pathinaanku Vethankal
 Lines : “Pathinaanku.....
swasamaame”

PROSE

(21 hrs)

- a) Name of the book : Siddharkal charithram
 Author : Chollin selvan
 Chapter : Brahmamuni, Korakkar
- b) Name of the book : “Lemuria allathu Kumari Kandam”
 Chapter : Kumari nadu pattriya
 Tamil nool kurippukal
 Author : Panmozhi pulavar
 K.Appathurai.
- c) Name of the book : Pattukkottai
 Kaliyana Sundaram Padalkal Author :
 KunRakkudi Adikalaar
 Chapter : Preface of
 Pattukkottai
 kaliyana
 Sundaram
 Padalkal
- d) Name of the book : NallaTheerppu

(An eloquent speech of
C.N. Anna Durai)

Unit : 5 Study of History of siddha medicine – Selected portion from the
Siddha literature. (20 hrs)

Topics:- Siddharkal enpor jaar?- Pathinen Siddharkal –
Navanaatha Siddharkal – Siddha Maruthuvathin
Chirappukkal – Siddha Maruthuva Varalaru in brief –
Iyankum Porudkalum Iyankaa Porudkalum.(who are
Siddhars'; Eighteen Siddhars – Navanatha Siddhars –
The importance of Siddha medical practices- Brief
history of Siddha medical practices – movable and
immovable things)

Unit : 6 Exercises in narration / description of a story or an event in a
paragraph. (3 hrs)

Unit :7 Translation from Tamil to Regional language or English – and
Vice versa. (3 hrs)

References Books:

S.No.	Name of book, Language, publishers & year of publication	Author
1.	Thottakkirama aaraichiyum maruthuva varalaarum.	Dr. Uthamarayan
2.	Siddha maruthuvanga churukkam.	Dr. Uthamarayan
3.	Siddha vaidhya thirattu.	Dr. Uthamarayan
4.	Pathinen siddhargal varalarum Padaitha noolgalum.	Murugesan
5.	Siddhargal, Thamarai noolagam, Chennai – 26.	-

Note: **Internal Oral Test** to be conducted at the end of the course

3. UYIR VEDHIYIAL (BIOCHEMISTRY)

Total Hours : 150

1. Chemistry of Carbohydrates:

(9 hours)

Functions of Carbohydrates, Classification of Carbohydrates, Classification and
biomedical importance of monosaccharides, Reactions of monosaccharides,

Classification and biomedical importance of disaccharides, Polysaccharides-
Classification, composition and function.

2. Chemistry of Lipids: (8 hours)

Functions of Lipids, Classification of Lipids, Classification of fatty acids, Essential fatty acids, Free radicals and antioxidants, Types and functions of phospholipids, Glycolipids and lipo proteins, Steroids, Micelles, Names and functions of eicosanoids.

3. Chemistry of Proteins : (11 hours)

Functions of proteins, Classification of proteins based on chemical nature and solubility, classification of amino acids based on structure, Structure of proteins primary, secondary, tertiary and quaternary. Biologically important peptides. Plasma proteins: Types and major functions, the complement system.

4. Nucleic acids and Biotechnology: (8 hours)

Watson and cricks structure of DNA, Types and functions of RNA, structure of transfer RNA, Replication of DNA, Definition of transcription, Polymerase chain reaction (PCR), - Principle, technique, applications. Human genome project, Bioinformatics.

5. Purine nucleotides: (4 hours)

Degradation of purine nucleotides, Gout.

6. Metabolism of carbohydrates: (10 hours)

Glycolysis, TCA cycle, HMP shunt pathway, Glycogenesis, glycogenolysis, and Gluconeogenesis. Glucose homeostasis, Diabetes mellitus.

7. Metabolism of proteins: (6 hours)

Transamination, deamination and urea cycle. Biosynthesis of proteins (Translation).

8. Metabolism of Lipids: (9 hours)

Fatty acid oxidation, Ketone bodies, Ketosis. Biosynthesis of fatty acids, Biosynthesis of cholesterol, Degradation of cholesterol, Hypercholesterolemia, Metabolism of HDL, Fatty liver, Obesity.

9. Biological oxidation (8 hours)

Classification of high energy compounds, ATP-ADP cycle, oxidative phosphorylation and electron transport chain, substrate level phosphorylation.

10. Enzymes: (9 hours)

Classification, Factors affecting enzyme activity, Active site, Mechanism of enzyme action, Coenzymes, Diagnostic importance of enzymes, Enzyme pattern in diseases.

11. Digestion and absorption of carbohydrates, proteins and lipids. (8 hours)

12. Haemoglobin: (5 hours)

Structure of haemoglobin, Biosynthesis of heme, Degradation of heme.
Clinical significance of Glycosylated Haemoglobin, Jaundice

- 13. Vitamins:** (9 hours)
Fat soluble Vitamins and Water soluble vitamins –food source, RDA, biochemical functions and deficiency manifestations.
- 14. Hormones: Biochemical functions and disorders.** (9 hours)
- 15. Minerals:** (9 hours)
Macro Elements and Micro Elements–food source, RDA, biochemical functions and deficiency manifestations.
- 16. Metabolism of Xenobiotics (Detoxification).** (3 hours)
- 17. Water and electrolytes:** (5 hours)
Functions of water, water turn over and balance, Composition of electrolytes in the body fluids.
- 18. Nutrition:** (7 hours)
Calorie value of food stuffs, Basal metabolic rate, Specific dynamic action, Fibre in nutrition, Balanced diet, protein – Energy malnutrition, Energy requirements.
- 19. Cancer and AIDS:** (5 hours)
Cancer – Etiology and tumour markers. AIDS – Transmission of HIV and Lab Diagnosis.
- 20. Organ function tests:** (8 hours)
Liver function tests, Renal function tests, Thyroid function tests.

PRACTICAL Total Hours : 100

PART A. Qualitative Analysis:- (26 hours)

I. Reactions of carbohydrates -

1. Reactions of Glucose.
2. Reactions of Fructose.
3. Reactions of Maltose.
4. Reactions of Lactose.
5. Reactions of Sucrose.
6. Reactions of Starch.

II. Reactions of Protein -

1. Reactions of Albumin.
2. Reactions of Peptone.
3. Reactions of Gelatin.
4. Reactions of Casein.

III. Reactions of non protein nitrogenous substances – urea, uric acid, creatinine.

IV. Reactions of Normal Urine.

V. Analysis of abnormal urine.

PART B. QUANTITATIVE ANALYSIS**(48 hours)**

1. Estimation of Blood Sugar.
2. Estimation of serum total proteins.
3. Estimation of serum cholesterol.
4. Estimation of serum triglycerides.
5. Estimation of serum urea.
6. Estimation of serum uric acid.
7. Estimation of serum creatinine.
8. Estimation of serum bilirubin.
9. Estimation of serum inorganic phosphate.
10. Estimation of serum amylase.
11. Estimation of SGOT.
12. Estimation of SGPT.

PART C: DEMONSTRATION**(6 hours)**

1. Glucose Tolerance Test with graph (Normal and Abnormal).
2. Paper electrophoresis.
3. Paper chromatography.

PART D: SPOTTERS**(10 hours)**

1. Calorimeter
2. PH meter
3. Haemoglobinometer
4. Rhyles tube.
5. Spectroscope
6. Centrifuge
7. Electrophoresis
8. Chromatography
9. Osazones
10. Semi auto analyzer

PART E: CASE REPORTS**(10 hours)**

1. GTT Graph
2. Renal Glycosuria
3. Acute myocardial infraction
4. Jaundice
5. Gout
6. Hyperthyroidism
7. Vitamin D deficiency
8. Renal failure
9. Kwashiorkor
10. Hypercholesterolemia.

Reference Books:

S.No.	Name of book, Language, publishers & year of Publication	Author
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1.	Biochemistry	U.Satyanarayana, U.Chakrapani
2.	Text book of biochemistry	D.M. Vasudevan, Sreekumari. S
3.	Biochemistry	Pankaja Naik
4.	Pr's Illustrated Bio - Chemistry	
5.	Manual of practical medical biochemistry	Evangeline Jones. M.D.
6.	Practical text book of biochemistry	D.M. Vasudevan, Subir Kumar das

4. MARUTHUVA THAVARAIYAL (MEDICINAL BOTANY AND PHARMACOGNOSY)

THEORY:

Total Hours : 200

MEDICINAL BOTANY

Unit - I:

(25 hours)

Definition - History and importance of Medicinal plants in Siddha science.

Plant biology and Medicinal uses of the following groups: Thallophytes, Bryophytes, Pteridophytes and Gymnosperms.

Study of Life-cycle of the following: Gracilaria, Penicillium, Parmelia and Dryopteris.

Unit -II:

(35 hours)

Taxonomy of Angiosperms- Natural system of classification (Bentham and Hooker) Herbarium Techniques

Diagnostic vegetative and Reproductive characters, Active principles and Pharmacological constituents of most used plants of the following families:

1. Ranunculaceae
2. Annonaceae
3. Menispermaceae
4. Capparaceae
5. Malvaceae
6. Zygophyllaceae
7. Rutaceae
8. Meliaceae
9. Fabaceae
10. Caesalpiniaceae
11. Mimosaceae
12. Combretaceae
13. Myrtaceae
14. Cucurbitaceae
15. Apiaceae
16. Rubiaceae
17. Asteraceae
18. Apocynaceae
19. Asclepiadaceae

20. Convolvulaceae
21. Solanaceae
22. Acanthaceae
23. Lamiaceae
24. Nyctaginaceae
25. Amaranthaceae
26. Aristolochiaceae
27. Euphorbiaceae
28. Zingiberaceae
29. Liliaceae
30. Poaceae

Unit – III: (30 hours)

Plant Anatomy: Idealised plant cell structure, cell organelles and cell inclusion.

Study of following anatomical structures Dicot leaf, stem and root, Monocot leaf, stem and root.

Unit – IV: (25 hours)

Plant Ecology - Plants in relation to environment - Hydrophytes, Mesophytes, Xerophytes and Halophytes.

Conservation of extant and endangered medicinal plants.

Plant tissue culture - culture methods - callus initiation - laboratory organization. Detailed study on phytochemical production in tissue culture methods. Maintenance of herbal gardens.

PHARMACOGNOSY

Unit-I: (30 hours)

Study of organized raw drugs based on their morphology:

Roots and Rhizomes

Woods

Barks and Galls

Leaves

Flowers

Fruits

Seeds

Whole plant

Unit -II: (15 hours)

Study of unorganized raw drugs:

Gums

Resins and types

Fixed oils

Unit –III: (20 hours)

Phytochemistry (pharmacological actions of the following)

Glycosides-Anthroquinone, Cardiac and Saponins

Alkaloids-Tropane, Quinoline and Indole

Tannins-Hydrolysable and Condensed

Volatile oils-Obtained from the various plant parts

Pigmentation studies-Chlorophyll, Xanthophyll, Anthocyanin

Unit-IV: (20 hours)

Adulteration of raw drugs & detection. Poisonous plants. Basics of Herbal drug standardization.

PRACTICALS: Total Hours : 100

1. Microscopic slides observation of the non-flowering plant genera mentioned in Unit-I. (10 hours)
2. Identification of Angiosperm families given in Unit II. (20 hours)
3. Field study of various medicinal plants in their original habitat and pigment studies. (15 hours)
4. Submission of Herbarium (20 sheets) & Raw drugs (30). (14 hours)
5. Pigment studies - By paper chromatography method. (3 hours)
6. Anatomical study of plant parts — by section method mentioned in Unit III. (12 hours)
7. Plant Ecology - adaptation - Macroscopic & Microscopic mentioned in Unit IV. (10 hours)
8. Raw Drugs - Identification. (16 hours)

References Books:

S.No.	Name of book, Language, publishers & year of publication	Author
1.	College botany vol. I, II, III, Ed. 2000, New Central Book Agency Pvt Ltd.	Gangulee et al.
2.	Outlines of Botany,. Ed. 2003, S. Viswanathan Publishers.	V. Narayanaswamy et. al.
3.	Plant Ecology, S. Chand & Co.	Sharma
4.	A Text Book of Botany - Angiosperms, Rastogi Publishers, Meerut.	V. Singh, Pande & Jain
5.	Medicinal Botany Vol-I&II (Tamil) - Elangovan Publishers.	Somasundaram
6.	Medical Taxonomy of Angiosperms. Recent trends in Medical used and Chemical constituents. Harishi Publication, Chennai.	S. Shankaranarayanan
7.	Taxonomy of Angiosperms (Tamil) V.K. Publishing House, Chennai	S. Pazhaniyappan
8.	Elements of Biotechnology, Rastogi & Company.	P.K. Gupta
9.	Text Book of Pharmacognosy, Nirali Prakashan, Pune.	Gokhale et. al.
10.	Practical Pharmacognosy, Vallabh Prakasham, Delhi – 34.	Dr. C.K. Koate.

General Bacteriology**(15 hours)**

1. Introduction and History
2. Morphology of Bacteria
3. Growth and Nutrition of Bacteria
4. Classification and Identification of Bacteria
5. Culture media and cultivation methods
6. Sterilization and disinfection
7. Antimicrobial sensitivity

Systemic Bacteriology**(30 hours)**

1. Gram Positive Cocci - Staphylococcus, Streptococcus, Pneumococcus & Enterococcus
2. Gram Negative Cocci - Meningococci and Gonococci
3. Enterobacteriaceae - Escherichia, Klebsiella, Proteus, Salmonella and Shigella
4. Vibrio cholerae, Pseudomonas, Haemophilus
5. Clostridium tetani, C.perfringens, C.botulinum
6. Bacillus anthracis
7. Corenebacterium diphtheriae
8. Mycobacterium - Tuberculosis and Leprosy
9. Spirochaetes - Treponema & Leptospira
10. Mycoplasma, Chlamydiae & Rickettsiae

Immunology**(20 hours)**

1. Infection
2. Structure and function of immune system
3. Immunity
4. Antigens
5. Antibodies
6. Antigen - antibody reaction - Agglutination, Precipitation, Immunofluorescence, Coomb's Test, ELISA, Western blot
7. Complement system
8. Hypersensitivity
9. Auto-immunity

Mycology**(5 hours)**

1. Opportunistic Mycosis
2. Dermatophytes
3. Cryptococcus, Rhinosporidium and Histoplasma
4. Mycotoxicosis and Mycetism

Virology**(20 hours)**

1. General properties and cultivation of Virus
2. Bacteriophage
3. Pox virus
4. Herpes virus - HSV-I &II
5. Myxovirus - H1N1, Avian flu, Mumps and Measles
6. Corona virus — SARS
7. Polio virus
8. Rabies virus
9. Hepatitis virus (A, B & C)
10. Arbo virus - Chikungunya, Dengue & Rubella
11. Retro virus - HIV

Clinical Microbiology

1. Nosocomial infection
2. UTI
3. Meningitis
4. Bacterial food poisoning
5. PUO
6. Biomedical waste management
7. Vaccines (Bacterial & Viral)

Practical

1. Microscopy - Light, Dark Ground, Fluorescent, Electron
2. Staining - Gram's and AFB staining.
3. Culture methods - Streak plate, Anaerobic, RCM.
4. Bacterial identification - Esch.coli, Klebsiella, Pseudomonas, Vibrio cholerae, Corynebacterium, diphtheriae, Staphylococcus aureus.
5. Serology - WIDAL & VDRL with clinical significance.
6. Immunology — ELISA, Latex agglutination.
7. Mycology - LPCB mounting.
8. Viral model - Rabies, HIV, Orthomyxo & Adeno virus.

Total Hours : 100

(6 hours)

(15 hours)

(11 hours)

(45 hours)

(4 hours)

(6 hours)

(6 hours)

(7 hours)

Reference Books:

S.No.	Name of book, Language, publishers & year of publication	Author
1.	Text Book of Microbiology	Ananthanarayan and C.K. Jayaram Paniker
2.	Text Book of Microbiology	D.R. Arora and B Arora
3.	Medical Microbiology	Robert Cruik Shank

SYLLABUS FOR SECOND PROFESSIONAL BSMS

UDAL KOORUGAL (ANATOMY) PAPER I

TOTAL HOURS: 100

I OSTEOLOGY WITH APPLIED ANATOMY

(30 hours)

1. General structure of bone and Ossification
2. Types of bones
3. Skull – Norma frontalis, Norma verticalis, Norma basalis, Norma lateralis, Norma occipitalis, Cranial fossa
4. Paranasal sinuses
5. Mandible
6. Hyoid bone
7. Vertebral column – Cervical, Thoracic, Lumbar, Sacrum and Coccyx (Typical and atypical)
8. Ribs, Costal cartilages and Sternum
9. Bones of Upper limb – Clavicle, Scapula, Humerus, Radius, Ulna
10. Name and numbers of Carpal, Metacarpal and Phalanges
11. Bones of Lower limb – Hip bone, Comparison between male and female pelvis, Femur, Patella, Fibula, Tibia
12. Name and numbers of Tarsal, Metatarsal and Phalanges
13. Arches of foot

II ARTHROLOGY WITH APPLIED ANATOMY

(10 hours)

1. Classification of joints
2. Temporomandibular joint
3. Intervertebral joints
4. Joints of Pelvis (Lumbo-Sacral joint, Sacro-iliac joint, Pubic symphysis)
5. Shoulder joint
6. Elbow joint
7. Wrist joint
8. Hip joint
9. Knee joint
10. Ankle joint

III MYOLOGY WITH APPLIED ANATOMY

(20 hours)

1. Scalp
2. Muscles of facial expression
3. Muscles of mastication
4. Muscles of eyeball
5. Suprahyoid muscles
6. Infrahyoid muscles
7. Name of the Pre and Para vertebral muscles
8. Latissimus dorsi, Trapezius, Rhomboideus major and minor, Name of other muscles of back
9. Pectoral region muscles
10. Scapular region muscles
11. Muscles of Arm
12. Muscles of Forearm

13. Muscles of hand
14. Inter costal muscles and diaphragm
15. Anterior and Posterior Abdominal wall muscles
16. Pelvic floor and Perineal muscles
17. Gluteal muscles
18. Muscles of thigh
19. Muscles of leg
20. Muscles involved in the formation of sole of foot

FOSSAE AND TRIANGLES WITH APPLIED ANATOMY

(5 hours)

1. Triangles of neck
2. Axilla
3. Cubital fossa
4. Ischiorectal fossa
5. Inguinal canal
6. Adductor canal
7. Femoral triangle
8. Popliteal fossa

IV ANGIOLOGY WITH APPLIED ANATOMY

(Origin, termination, course and branches/tributaries have to be studied)

ARTERIAL SYSTEM

(20 hours)

1. Aorta – Ascending aorta – Coronary arteries – Arch of aorta – Brachiocephalic trunk – Left and Right Common Carotid – Left and Right Subclavian arteries
2. External and Internal carotid arteries, Vertebral and Basilar arteries – Formation of Circle of Willis
3. Major Arteries in Upper limb – Axillary – Brachial – Radial – Ulnar arteries – Superficial and deep palmar arches
4. Thoracic aorta – Abdominal aorta
5. Common iliac – External and Internal iliac artery
6. Major arteries in Lower limb – Femoral – Popliteal – Anterior and Posterior Tibial Arteries – Dorsalis Pedis artery – Plantar arch

VENOUS SYSTEM

(10 hours)

1. Dural Venous Sinuses
2. External and Internal Jugular Vein
3. Veins of Upper limb – Dorsal Venous arch - Cephalic – Basilic – Median Cubital Vein
4. Coronary sinus
5. Veins of thorax – Brachiocephalic – Azygos – Hemi azygos – Accessory azygos
6. Superior and Inferior vena cava
7. Portal vein and Portacaval anastomosis
8. Veins of lower limb – Dorsal Venous arch – Great and small Saphenous – Anterior and Posterior Tibial Vein

V. LYMPHATICS WITH APPLIED ANATOMY

(5 hours)

1. Cisterna Chyli – Thoracic duct – Right lymphatic duct (2hrs.)
2. Axillary, Cervical, Inguinal lymph nodes and its drainage (3hrs.)

PRACTICALS FOR UDAL KOORUGAL-I

TOTAL HOURS :75

1. Whole body dissection demonstration. (10hours)
2. Specimen demonstration. (65hours)

REFERENCE BOOKS

- a. Bhojani, Meera K, and Pranab Kumar Charaborthy [Editors], "Inderbir Singh's Textbook of Anatomy for Ayush students", First Edition 2017, Jaypee Brother Medical Publishers (P) Ltd., NewDelhi.
- b. Garg, Krishna et al., B.D Chaurasia's Human Anatomy (4 Volumes), 7th Edition, 2016. CBS publishers and Distributers Pvt Ltd., NewDelhi.
- c. Inderbir Singh., "A Textbook of Anatomy with Colour, Atlas (3 Volumes), Fourth Edition, 2007, Jaypee Brother Medical Publishers (P) Ltd., NewDelhi.
- d. Moni, A.S., " Medical Anatomy (Regional and Applied) Third revised edition, 2009, Published by U. Bhagavathy, Tirunelveli – 11, Ph: (0462) –2578255
- e. Ranganathan, T.S., " A Textbook of Human Anatomy", 5th Edition, (2000) S. Chand and Company, NewDelhi
- f. Sandring, Susan – "Gray's Anatomy" 41st Edition, 2016, Elsevier scientific publisher.
- g. Snell, Richard S., "Clinical Anatomy By Regions" 8th Editions, Indian Reprint2008,

सर्वे भवन्तु सुखिनः



UDAL KOORUGAL (ANATOMY) PAPER II

TOTAL HOURS : 100

I. NERVOUS SYSTEM

(40 hours)

1. Meninges of brain and spinalcord
2. Cerebrum – Lobes, Surfaces, Poles, Fissures, Sulci and Gyri, Areas, Types of fibres, Corpus callosum and Internal capsule
3. Basalnuclei
4. Names of nuclei of Diencephalon
5. Thalamus, Hypothalamus – Parts, Nuclei and Connections
6. Location and boundaries of Ventricles
7. Formation and circulation of CSF
8. External and internal features of Brainstem
9. External and internal features of Cerebellum
10. External and internal features of Spinal cord including tracts
11. Cranial nerves
12. Formation of typical spinal nerves and intercostals nerves
13. Formation of Cervical, Brachial, Lumbar and Sacral plexus including branches
14. Name and location of Sympathetic and Parasympathetic ganglion

II. SPECIAL SENSES

(10hours)

1. Eye
2. Ear
3. Nose
4. Tongue
5. Skin

III. RESPIRATORY SYSTEM

(5hours)

1. Larynx
2. Trachea
3. Mediastinum
4. Pleura, Lungs and Bronchopulmonary segments

IV. CARDIOVASCULARSYSTEM

(2 hours)

1. Heart
2. Pericardium

V. DIGESTIVESYSTEM

(20 hours)

1. Oral cavity, Palate, Salivary glands
2. Structure and types of teeth
3. Pharynx
4. Oesophagus
5. Stomach
6. Small intestine
7. Large intestine
8. Peritoneum and its folds
9. Liver
10. Extra biliary apparatus
11. Pancreas

LYMPHOID ORGANS**(3hours)**

- a) Spleen
- b) Thymus glands
- c) Tonsils

VI. UROGENITAL SYSTEM**(15hours)**

1. Kidney
2. Ureter
3. Urinary bladder
4. Male and female urethra
5. Male reproductive organs - Scrotum, Testes, Epididymis, Seminal vesicles, Vas deferens, Spermatic cord, Prostate gland, Penis
6. Female reproductive organs – Uterus, Uterine tubes, Ovaries, External genitalia, Mammary glands

VII. ENDOCRINOLOGY**(5 hours)**

1. Pituitary gland
2. Pineal gland
3. Thyroid and Parathyroid
4. Suprarenal gland

PRACTICALS FOR UDAL KOORUGAL–II**TOTAL HOURS :75**

1. Whole body dissection demonstration. **(10hours)**
 2. Specimen demonstration **(65hours)**
-

REFERENCE BOOKS

1. Bhojani, Meera K, and Pranab Kumar Charaborthy [Editors], "Inderbir Singh's Textbook of Anatomy for Ayush students", First Edition 2017, Jaypee Brother Medical Publishers (P) Ltd., New Delhi.
2. Garg, Krishna et al., B.D Chaurasia's Human Anatomy (4 Volumes), 7th Edition, 2016. CBS publishers and Distributors Pvt Ltd., NewDelhi.
3. Inderbir Singh., "A Textbook of Anatomy with Colour, Atlas (3 Volumes), Fourth Edition, 2007, Jaypee Brother Medical Publishers (P) Ltd., NewDelhi.
4. Moni, A.S., " Medical Anatomy (Regional and Applied) Third revised edition, 2009, Published by U. Bhagavathy, Tirunelveli – 11, Ph: (0462) – 2578255
5. Ranganathan, T.S., " A Textbook of Human Anatomy", 5th Edition, (2000) S. Chand and Company, NewDelhi
6. Sandring, Susan – "Gray's Anatomy" 41st Edition, 2016, Elsevier scientific publisher.
7. Snell, Richard S., "Clinical Anatomy By Regions" 8th Editions, Indian Reprint 2008, Wolters Kluwer Health, NewDelhi.

DISTRIBUTION OF MARKS FOR PRACTICAL EXAMINATION

PRACTICAL EXAMINATION TOTAL MAXIMUM MARKS

100 Marks

Practical written- Udal Koorugal (Anatomy) Paper I&II

70 Marks

Viva Voce - Udal Koorugal (Anatomy) Paper I&II

30Marks

Practical Written - Mark Distribution (70 Marks)

Udal Koorugal (Anatomy)Paper I

35Marks

Number of specimens (Dry, Wet, Clay models) 10

Each specimen carries 3.5Marks

Specimens (Dry, Wet, Clay models) details: -

Sl.No	Topics	Items	Number of specimens	Marks
1	Osteology	Sex determination	1	3.5
		Side identification	1	3.5
		Typical features	1	3.5
		Foramens	1	3.5
2	Arthrology	Joints	1	3.5
3	Myology	Muscle attachments/muscle actions/nerve supply	3	10.5
4	Angiology	Arteries/Veins	1	3.5
5	Lymphatics	Lymphatic vessels/Lymph nodes	1	3.5
TOTAL			10	35

Udal Koorugal (Anatomy) Paper II

35Marks

Number of specimens (Dry, Wet, Clay models) 10

Each specimen carries 3.5Marks

Specimens (Dry, Wet, Clay models) details: -

Sl.No	Topics	Items	Number of specimens	Marks
1	General (Cerebral hemisphere, Lungs, Kidneys)	Side identification	1	3.5
2	Nervous system	Brain/spinal cord/cranial nerves/spinal nerves	1	3.5
3	Special senses	Eye/Ear/Nose/Tongue/Skin	1	3.5
4	Cardio vascular system	Heart	1	3.5
5	Respiratory system	Larynx/Trachea/Lungs	1	3.5
6	Digestive system	Oesophagus/Stomach/Small intestine/ Large intestine/ Pancreas/ Liver/ Spleen	2	7
7	Genito urinary system	Excretory system	1	3.5
		Male/Female reproductive system	1	3.5
8	Endocrinology	Thyroid/Supra renal	1	3.5
TOTAL			10	35

3. UDAL THATHUVAM (PHYSIOLOGY) PAPER I

TOTAL HOURS : 75

1. Ninety six fundamental principles (Thathuvam) and its details. Five elements (Iymbootham) – five sense organs (pori) – five senses (pulan) – Motor organs (Kanmendryam) – Discriminative power of five senses (Gnanandriyam) – Four intellectual faculties (Karanam) – Wisdom of Self realization (Arivu)–Ten Vital channels(Dhasanadi)–Ten vital Air(Dhasavayu)–five visceral cavities(Asayam) - five sheaths (Kosam) – Six vital centres of the Soul (Aatharas) - Three regions (Mandalam) – Three impurities of soul (malam), Three humours (Thodam) - Three physical bindings (Edanai) – Three cosmic qualities (gunam) - Two acts (Vinai) – Eight passions (Ragam) – Five states of consciousness (Avathai) - in detail. **(10 Hours)**
2. Five elements and its medical aspects. Creation of five elements – properties – five fold combination (panchikaranam) – Manifestation of five elements in our body (panchabootha koorugal (or) Purakaruvikal) – Relation between five elements & six tastes – Five elements and three humours – five elements and seven physical constituents. **(5 Hours)**
3. Development of Embryo according to Siddhars' concepts. Role of five elements during fertilization, and intrauterine life – Different stages of foetal growth – sex determination & Determination of life span according to Siddhar's concept. **(6 Hours)**
4. Three humoral theory Vatham:- Predominant locations – properties – physiological role. Functional varieties of vatham – Pranan – Udhanan – Samanan – Abanan – Viyanan – Nagan – Koorman – Kirukaran – Devadhathan – Dhananjeyan. Pitham:- Predominant locations – properties – physiological role. Functional varieties of pitham - Pasakam – Ranjakam – Sathakam – Aalosakam – prasakam. Kapham:- Predominant location – properties – physiological role Functional varieties of pitham. – Avalampakam – Kilethakam – Pothakam – Tharpakam – Santhikam. Temperament of an individual Features of Vatha temperament – Pitha temperament – Kapha temperament. **(5 Hours)**
5. Seven physical constituents: Nutrient juice (saram) – Blood (Chenneer) – Muscle (ooun) – fat & adipose tissue (kozhuppu) – Bone & Teeth (Enbu) – Bone marrow & nervous tissue (Moolai) – Semen or ovum (Sukilam/suronitham) – their nature and functions. **(5 Hours)**
6. Five sheaths (Kosangal) Physical sheath (Annamaya kosam) – Respiratory sheath (Piranamaya kosam) – Mental sheath (Manomaya kosam) – Intellectual sheath (vignanamaya kosam) – Blissful sheath (Ananthamaya kosam) **(2 Hours)**
7. Physical sheath:- Composition of food materials – waste or excretory materials (Chakkai) – Nutrients
 1. Tastes – Three vital units (Uyir thathu) – qualities (gunam) Taste:- Properties of six tastes – Synergetictaste(natpusuvai)Antagonistictaste(pakaisuvai)Vathafood–pithafood–Kaphafood - Sathuva food – Rajasa food - Thamasa food – food and seasons. **(5 Hours)**
8. Respiratory sheath:- Functions of pranan – Regulation of breathing – Pranayama thathuvam. **(4 Hours)**
9. Mental sheath Siddhars concept of Naadi – Definitions , Formation and – Characteristics of Naadi (Naadi Nadai) – Naadi ratio – Ten important sites of Naadi – Guru Naadi – Bootha Naadi – Vatha, pitha, Kapha naadi & conjoined naadi (Thondha Naadi) **(6 Hours)**
10. Fourteen Natural Urges (Vehangal) Vatham (flatus air) – Thummam (sneezing) – Neer (micturition) – Malam (Defecation) – Kottavi (Yawning) – Pasi (appetite) – Neervetkai (Thirst) – Kasam (cough)

– Illaippu (exhaustion) – Nithirai (sleep) – Vanthi (Vomiting) – Kanner (Tears) – Sukilam (semen) – Suvasam (Breathing). **(5 Hours)**

11. Longevity of life – According to Siddha principles – Concentration of six Psychophysical centres (Aatharas) – Stimulation of Adharas by meditation & Yoga. **(3 Hours)**

12. Intellectual sheath:- (Vingnana maya kosam) Four intellectual faculties (Anthakaranam) – Good & Bad Acts (Iruvinai) – Mukkunam (Satwa, Rajas & Thamas) – Aatharam (six station of soul) – Avathai (Six stages of consciousness) – Dhasa Nadi (Idakalai, Pinkalai, Suzhumunai, Sikuvai, Purudan, Kanthari, Atthi, Alampudai, Sankini & Gugu) **(6 Hours)**

13. Blissful sheath (Anantha maya kosam) Self realization (Arivu) – achievement (Siddham) and its details **(3 Hours)**

14. Envagai Thervu: Naa- Niram – Mozhi – Vizhi – Malam – Moothiram- Naadi – Sparisam- Physiological Aspect. **(10 Hours)**

PRACTICAL

Part-A

Major:

- Examination of Naadi
- Examination of Udal kattugal (Physical Constituents)
- Examination of Envagai Thervu
- Examination of Udaliyal (Temperament)

Part-B

Minor:

9. Suvaigal
10. Unavu Porutkkal

Reference Books

1. Udal Thathuvam – Dr.P.M.Venu Gopal – Indian Medicine & Homeopathy Dept.,Chennai.
2. Siddha Maruthuvanga Surukkam – Dr.K.S.Uthamarayan – Indian Medicine & Homeopathy Dept.,Chennai.
3. Noi Naadal – Dr.M.Shanmugha Velu – Indian Medicine & Homeopathy Dept.,Chennai.
4. Thortrakirama Aaraichiyum & Siddha Maruthuva Varalarum – Dr.K.S.Uthamarayan – Indian Medicine & Homeopathy Dept.,Chennai.

4. UDAL THATHUVAM (PHYSIOLOGY) PAPER II

Total hours : 75

1. GENERAL PHYSIOLOGY

3 hrs

Cell and its Functions, Transport across cell membrane, Homeostasis – positive and negative feedback Mechanism

Applied physiology - Acidosis (Metabolic, Respiratory) - Alkalosis (Metabolic, Respiratory)



2. Blood and Body fluids

10 hrs

Body fluids - ECF & ICF, Blood, Plasma proteins - classification and functions

Erythrocytes - Erythropoiesis - functions - destruction. Haemoglobin and 'Fe' Metabolism, Anaemia, Leucocytes - Classification, functions, formation, fate of WBC and Immunity.

Platelets, Haemostasis, Blood Volume, Coagulation of Blood, Blood groups

Applied physiology- Dehydration - Water intoxication - Types of Anemia - Polycythemia - Purpura - Hemophilia - Erythroblastosis foetalis, Auto immune diseases.

3. Muscle Physiology

4 hrs

Classification, Properties, Changes during Muscular contraction and relaxation of Smooth, Cardiac and Skeletal muscles, Proprioceptors.

Neuromuscular junction

Applied physiology Myasthenia gravis - Muscular dystrophy.

4. Renal physiology and Excretion

8 hrs

Kidney, Nephron, Renal circulation, Juxta glomerular apparatus, GFR Renal Circulation, Urine formation

Role of kidney in Acid base balance, Micturition Renal Function Tests. Renal Failure

Regulation on Body temperature Functions of Skin

Applied physiology Diabetes insipidus - Osmotic diuresis - Polyuria - Renal failure. Hyperthermia, Hypothermia.

5. Endocrinology

5 hrs

Introduction to Endocrinology, Regulation of secretion and Functions of Pituitary, Thyroid, Parathyroid, Pancreas, Adrenal cortex and Medullary Hormones

Applied physiology Gigantism - Acromegaly - Dwarfism - Diabetes Insipidus - Hyper thyroidism - Hypothyroidism - Osteoporosis - Rickets - Diabetes mellitus type I and II - Cushing syndrome - Addison's disease - Pheochromocytoma.

6. Reproductive system

4 hrs

Sexual differentiation of foetus in uterus. Male sex organs, Semen, Role of Male sex hormones, Prostate gland, Spermatogenesis, Female sex organs, Role of Female sex hormones, Oogenesis, Menstrual cycle, Ovulation, Menopause, Fertilization, Pregnancy, Parturition, Lactation.

Applied Physiology - Male andropause - Exstrophy of testes - gonadism - Aspermia - Azoospermia - Oligospermia - Hematospermia - Abnormal menstruation - Post menopausal syndrome - Infertility, Reproductive ageing - Male & Female.

7. Digestive system

7 hrs



Introduction of GIT

Mastication, Salivary glands, composition & function of saliva, control of salivation, Deglutition, Secretion, composition, functions of Stomach, Pancreas, Liver, Small intestine, Large Intestine, Gallbladder, Motility of GIT, Defecation

Applied physiology - Gastritis, Gastric Atrophy - Zollinger Ellison syndrome - Peptic ulcer, Hypo Salivation, Hyper Salivation, Xerostomia. - Steatorrhea - Jaundice - Cirrhosis of liver - Gall stone - Celiac disease - Mal absorption syndrome - Constipation - Ulcerative colitis - Dysphagia - GERD - Vomiting – Diarrhoea. Pancreatitis, Hepatitis, Crohn's diseases, Appendicitis.

8. Cardiovascular system

10 hrs

Introduction of CVS, Properties of cardiac muscle, Regulation of cardiac function, Cardiac cycle, Events & Phases, Heart sounds – Murmur, ECG, Cardiac output and Venous return, conducting tissues of the heart, Arterial Blood pressure & its Regulation, Arterial pulse and venous pulse, Haemodynamics,

Shock, Cardiovascular adjustment during exercise.

Applied physiology - Reduplication of First and second heart sounds - Hypertension - Hypotension - Pulsus deficit - Pulsus alternans - Anacrotic pulse - Pulsus paradoxus - Water hammer pulse - Patent ductus arteriosus - Myocardial Ischemia - Myocardial infarction - Angina pectoris - Stroke - Varicose veins.

9. Respiratory system

10 hrs

Respiratory Unit, Non - Respiratory Functions of Respiratory Tract, Pulmonary Circulation, Surfactant and Compliance, Mechanism of Respiration, Pulmonary Function Test, Lung volumes and capacities, Ventilation, Inspired Air, Alveolar Air and Expired Air, Exchange of Respiratory gases, Transport of O₂ and CO₂ Effects of respiration during exercise – Physiological effect of High altitude, Acclimatization-Deep sea Physiology, Regulation of Respiration, Disorders of Respiration, Artificial Respiration

Applied physiology - Apnea – Asphyxia - Dyspnea - Hypoxia - Hyperapnea, Hypocapnea - Periodic breathing - Pulmonary oedema - Pleural effusion - Emphysema - Bronchial asthma - ARDS (Acute Respiratory Distress Syndrome.)

10. Nervous system

10 hrs

Divisions of Nervous System Neuron, Synapse, Neuroglia,

Classification & Degeneration and Regeneration of Nerve fibres Receptors

Neurotransmitters, Reflex activity – Spinal reflex, Muscle Tone, Physiology of motor unit

Physiology of Pain

Functions of Spinal Tracts, Thalamus, Hypothalamus, Basal Ganglia, Brainstem, Cerebellum, Cerebral Cortex and ANS

Higher intellectual functions - EEG

Physiology of sleep, Reticular formation, CSF – formation, circulation and functions

Applied Physiology - Syringomyelia - Tabes Dorsalis - Multiple Sclerosis - Disk prolapse -



Hemiplegia - Parkinson disease - Wilson disease - Chorea - Motion sickness - Insomnia - Aphasia - Dysarthria – Dysphonia – Narcolepsy – Nocturnal Enuresis – Hydrocephalus

11.Special senses

4 hrs

Eye – Functional Anatomy of Eye - Visual Process, Field of vision, Pupillary reflex, Colour vision, Errors of Refraction – Visual Pathway

Ear – Functional Anatomy of Ear Mechanism of Hearing, Auditory Defects - Auditory Pathway

Sensation of Taste

Sensation of Smell

Applied Physiology - Cataract - Glaucoma - Color blindness - Errors of Refraction - Auditory defects - Ageusia – Anosmia - Horner's Syndrome

PRACTICAL

Part-A

Major:

- Estimation of Haemoglobin
- Determination of ESR
- Determination of PCV & Absolute values
- Total WBC Count
- Total RBC Count

Part-B

Minor:

- Determination of bleeding time
- Determination of clotting time
- Blood grouping and Rh typing
- Measurement of Body Temperature
- Measurement of Blood Pressure
- Examination of Deep Tendon Reflex(Specify)
- Examination of Superficial Reflex(Specify)
- Examination of Cranial Nerves(Specify)
- Examination of Cardio vascular System(Specify)
- Examination of Respiratory System(Specify)
- Examination of Digestive System(Specify)

Reference Books :-

1. Guyton & Hall Text Book of Medical Physiology -ELSEVIER
2. Ganong's Review of Medical Physiology – Tata Mc Graw Hill Education Pvt Ltd
3. Text book of Physiology - Dr.Saratha Subramaniyam – S.Chand Company
4. Essentials of Medical Physiology - Dr.K.S.Sembulingam – JAYPEE BROTHERS Medical Publishers
5. Practical Physiology – CL Ghai - JAYPEE BROTHERS Medical Publishers

DISTRIBUTION OF MARKS FOR UDAL THATHUVAM PRACTICAL EXAMINATION

PRACTICAL					
Total Maximum 100 Marks					
PAPER I			PAPER II		
Maximum Marks: 50			Maximum Marks: 50		
Practical		Viva -Voce	Practical		Viva-Voce
Major	Minor	15	Major	Minor	15
25	10		25	10	

5. GUNAPADAM-MARUNTHIYAL (PHARMACOLOGY) PAPER I –MOOLIGAI (MATERIA MEDICA - PLANT KINGDOM)

Detailed study about the following herbs which includes

1.Description,2.Verupeyarkal(Synonyms),3.Scientific name, 4.Various names in regional languages, 5. Identification, 6. Distribution 7. Pothu Gunam (General properties) 9. Suvai (Taste), Veeryam (Potency), Pirivu (Division), Specific action, 10. Organoleptic characters, 11. Therapeutic actions,12. Doses,13.Uses 14.Names of different formulations pertaining to this herb.15.Chemical constituents,16. Nanju (Toxicity if any) and Nanju murivu (Antidote) 17. Suddhi(Purification)

Sl. No.	Tamil Name	Botanical Name
1	Agatti	- Sesbania grandiflora
2	Akkarakaram	- Anacylus pyrethrum DC
3	Asogu	- Saraca asoca
4	Athimathuram	- Glycyrrhiza glabra
5	Atti	- Ficus recemosa
6	Abini -Kasa Kasa	- Papaver somniferum
7	Amukkurakkizhangu	- Withania somnifera
8	Amman pachcharisi	- Euphorbia pilulifera
9	Arasu	- Ficus religiosa
10	Arathai	- Alpinia galanga
11	Arunelli	- Phyllanthus acidus
12	Avarai	- Lablabpurpureus
13	Avuri	- Indigofera tinctoria
14	Azhavanam	- Lawsonia inermis
15	Azhinjil	- Alangium salvifolium
16	Arugu	- Cynodon dactylon
17	☆ Akasagarudan	- Corallocar pusepigaeus

18	Adathodai	-	Justicia adatoda
19	Adutheendapalai	-	Aristolochia bracteolata
20	Amanakku	-	Ricinus communis
21	Chitramanakku	-	
22	Peramanakku	-	Ricinus inermis
23	Chevvanamakku	-	Ricinus tanarius
24	Alamaram	-	Ficus benghalensis
25	Aavarai	-	Cassia auriculata
26	Attuthumatti	-	Citrullus colocynthis
27	Iruvi	-	Dryopteris felixmas
28	Isangu	-	Clerodendrum inerme
29	Isappukolvidhai	-	Plantago ovata
30	Inji	-	Zingiber officinale
31	Indu	-	Mimosa rubicaulis
32	Impural	-	Oldenlandia umbellata
33	Lavangam	-	Syzygium aromaticum
34	Lavangappattai	-	Cinnamomum verum
35	Iluppai	-	Madhuca longifolia
36	Ilaikalli	-	Euphorbia ligularia
37	Eechu (Sitrechu)	-	Phoenix sylvestris
38	Pereechu	-	Phoenix dactylifera
39	Echchura mooli	-	Aristolochia indica
40	Usilamaram	-	Albizia odoratissima
41	Uttamani	-	Pergularia daemia
42	Uppilangodi	-	Mimosa paniculata
43	Rudra jadai	-	Ocimum basilicum
44	Rudraksham	-	Elacocarpus phacellus
45	Uzhundu	-	Vigna mungo
46	Umaththai	-	Datura metel
47	Karu umaththai	-	
48	Etti	-	Strychnos nux-vomica
49	Erukku	-	Calotropis gigantea
50	Elumichai	-	Citrus lemon
51	Ellu	-	Sesamum indicum
52	Elam	-	Elettaria cardamomum
53	Chitrelam	-	Elettaria reginae
54	Kattu – elakkay	-	Amomum subulatum
55	Malayelam	-	
56	Udimaram	-	Lannea coromandelica
57	Omam	-	Carum copticum
58	Kurosani omam	-	Hyoscyamus niger
59	Oritazhthamarai	-	Ionidium suffrutiocosum
60	Orilai tamarai	-	Nervilia aragoana
61	Kanja	-	Cannabis sativa
62	Kadalazhinjil	-	Salacia reticulata
63	Kadalai	-	Cicer arietinum
64	Chengadugu	-	Brassica juncea
65	☆ Vengadugu	-	Brassica alba

66	Kadugu rokani	-	Picrorhiza scrophulariflora
67	Kadukkai pinchu	-	Terminalia chebula
68	Kandangkattari	-	Solanum surattense
69	Kanduparangi	-	Clerodendron serratum
70	Kasthuri manjal	-	Curcuma aromatica
71	Kamuku -Kalippakku	-	Areca catechu
72	Kottaikaranthai	-	Spaeranthus indicus
73	Karisalankanni	-	Eclipta prostrata
74	Karungali	-	Acacia catechu
75	Karunai thandu	-	Amarphophallus paeonicifolius
76	Karpuravalli	-	Aniso chilus carnosus
77	Karumbu	-	Saccharum officinarum
78	Karkadaga singhi	-	Rhus succedanea
79	Kallapai kizhangu	-	Glorius superba
80	Kaliyana pushnikay	-	Benincasa hispida
81	Kaliyana murukku	-	Erythrina variegata
82	Kazharchi kodi	-	Caesalpinia bonduc
83	Kala	-	Caris sacarandar
84	Kalli	-	Euphorbia ligularia
85	Kodikalli	-	Sarcosemma brevistigma
86	Shadhurakalli	-	Euphorbia antiquorum
87	Kalli-mulayan	-	Stapelia virgata
88	Kari-vembu	-	Murraya koenigi
89	Katrazhai	-	Aloe barbadensis
90	Kariabolam	-	Aloe littoralis
91	Kakkanam	-	Clitoria ternatea
92	Kakkai kolli	-	Anamirta cocculus
93	Kanchori	-	Tragiain volucrata
94	Kattatti	-	Bauhinia omentosa
95	Karai	-	Catunaregum spinora
96	Karpokarisi	-	Psoralea corylifolia
97	Kitchilikizhangu	-	Curcuma zeodaria
98	Kiraikal	-	Greens
99	Puthina	-	Mentha arvensis
100	Puliyarai	-	Oxalis orniculata
101	Manali kirai	-	Gisekia pharnaceoides
102	Kiraithandu	-	Amaranthus gangeticus
103	Kizhanelli	-	Phyllanthus amarus
104	Kungiliam	-	Shorea robusta
105	Kungumappoo	-	Crocus sativus
106	Kudasapalai	-	Holarrhena pubescens
107	Kudiyottupoondur	-	Argemone mexicana
108	Kunthrikkam	-	Boswellia serrata
109	Kuppeimeni	-	Acalypha indica
110	Kuruver	-	Vetiveria zizanioides
111	Kurinjan	-	Gymnema sylvestre
112	Kuntri	-	Abrus precatorius
113	☆Kodiveli	-	Glycosmis borealis

114	Chenkodiveli	-	Plumbago rosea
115	Koththumalli	-	Coriandrum sativum
116	Konrai-Sarak-Konrai	-	Cassia fistula
117	Sirukonrai	-	Cassia arborescens
118	Senkonrai	-	Cassia margiuata
119	Kottam	-	Costus speciosus
120	Korai	-	Cyperus rotandus
121	Kovai	-	Coccinia grandis
122	Jadamanji	-	Nardostachys grandiflora

Sl. No.	Tamil Name		Botanical Name
123	Sembagam	-	Michelia champaca
124	Chathakuppai	-	Anethum graveolens
125	Charanai	-	Trianthema decandra
126	Chandanam	-	Santalum album
127	Nattu jadhikai	-	Myristica fragrans
128	Chathipaththiri	-	Myristica fragrans
129	Shambrani	-	Styrax benzoin
130	Salamisri	-	Orchis latifolia
131	Sivathai	-	Operculina turpethum
132	Shivanar vembu	-	Indigofera aspalathoides
133	Chirunagapu	-	Mesua nagassarium
134	Chitramutti	-	Pavonia zeylanica
135	Peramutti	-	Pavonia odorata
136	Cheekai	-	Acacia sinuata
137	Sindil	-	Tinospora cordifolia
138	Porsindil	-	
139	Shimai atti	-	Ficus carica
140	Chirakam	-	Cuminum cyminum
141	Karunchirakam	-	Nigella sativa
142	Perunchirakam	-	Pimpinella anisum
143	Kattu chirakam	-	Vernonia antihelminthica
144	Chukku	-	Zingiber officinale
145	Chundai	-	Solanum torvum
146	Chemparuthi	-	Hibiscusrosa-sinensis
147	Chemparathai	-	Gossypium arboreum
148	Chembai	-	Sesbania sesban
149	Cheruppadi	-	Mollugo lotoides
150	Cheviyam	-	Piper nigrum
151	Cherankottai	-	Semecarpus anacardium
152	Manathathakkali	-	Solanum nigrum
153	Thannirvittan kizhangu	-	Asparagus racemosus
154	Thavasurungai	-	Rungia parviflora
155	Thazhuthazhai	-	Clerodendrum phlomoidis
156	Thamarai	-	Nelumbo nucifera
157	Thazhai	-	Pandanusodoratissimus
158	Thalisa-paththiri	-	Abies spectabilis
159	Thantri	-	Terminalia bellirica
160	Thippili	-	Piper longum
161	☆Thippiliver	-	Piper longum

162	Thirakshai	-	Vitis vinifera
163	Thutthi	-	Abutilon indicum
164	Thumbai	-	Leucas aspera
165	Thulasi	-	Ocimum sanctum
166	Thuthuvalai	-	Solanum trilobatum
167	Tengumaram	-	Cocos nucifera
168	Devadaru	-	Cedrus deodara
169	Thettran	-	Strychnos potatorum
170	Nancharuppan	-	Tylophora indica

Sl. No.	Tamil Name		Botanical Name
171	Naththaichuri	-	Spermaceoce hispida
172	Nanthiavattam	-	Tabernaemontana divaricata
173	Nannari	-	Hemidesmus indicus
174	Nabi	-	Aconitum napellus
175	Nayuruvi	-	Achyranthes aspera
176	Naval	-	Syzygium cumini
177	Nilavembu	-	Andrographis paniculata
178	Nila varai	-	Cassiasenna
179	Neeradimuthu	-	Hydnocarpus laurifolia
180	Nirmulli	-	Hygrophila auriculata
181	Nuna	-	Mosinda tinctoria
182	Neichatti	-	Vernonia cinerea
183	Nerunjil	-	Tribulus terrestris
184	Nel	-	Oryza sativa
185	Nelli	-	Phyllanthus emblica
186	Nervalam	-	Croton tiglium
187	Notchi	-	Vitex negundo
188	Pachillai	-	Garcinia xanthochymus
189	Pala	-	Artocarpus heterophyllus
190	Palasu	-	Butea monosperma
191	Parangippattai	-	Smilax china
192	Parppatakam	-	Hedyotis ambrose
193	Panai	-	Horstrus flbellifer
194	Vetpalai	-	Wrightia tinctoria
195	Pitharoghani	-	Coptisteeta
196	Pidangunasi	-	Premmato mentosa
197	Pirandai	-	Cissus quadrangularis
198	Chirupelai	-	Aerva lanata
199	Pugaiyilai	-	Nicotiana tobacum
200	Pungu	-	Pongamia pinnata
201	Puli	-	Tamarindusindicus
202	Puvarasu	-	Thespesia populnea
203	Poonaikali	-	Mucuna pruriens
204	Perungayam	-	Ferula asafetida
205	Poduthalai	-	Phyta nodiflora
206	Ponnanganni	-	Alternanthera sessilis
207	Magizh	-	Mimusops elengi
208	Mangusthan	-	Garcinia mangostana
209	☆Manjal	-	Curcuma longa

210	Mara manjal	-	Coscinium fenestratum
211	Manjitti	-	Rubia cordifolia
212	Madanakamappu	-	Cycus circinalis
213	Malli	-	Jasminum grandiflorum
214	Marakkurai	-	Catunaregum spinosa
215	Maruthu	-	Terminalia arjuna
216	Maa	-	Mangifera indica
217	Masikkai	-	Quercus infectoria
218	Masipathiri	-	Artemisia gisica
Sl. No.	<u>Tamil Name</u>		<u>Botanical Name</u>
219	Mathulai	-	Punica granatum
220	Milagu	-	Piper nigrum
221	Val milagu	-	Piper cubeba
222	Milakaranai	-	Todalia asiatica
223	Musumusukkai	-	Mukia madraspatana
224	Mudakkattan	-	Cardiospermum helicacabum
225	Murungai	-	Moringa oleifera
226	Mukkirattai	-	Boerhavia diffusa
227	Mungil	-	Bambusa arundinacea
228	Vasambu	-	Acorus calamus
229	Vandukolli	-	Cassia alata
230	Valampurikkai	-	Helicter esisora
231	Vallarai	-	Centella asiatica
232	Vadhanarayan	-	Delonix elata
233	Vaividangum	-	Embelia ribes
234	Valuzhuvai	-	Celestrus paniculatus
235	Vazhai	-	Musa paradisiaca
236	Vidathari	-	Dichrostachyscinerea
237	Virali	-	Dodonaea viscosa
238	Vilvam	-	Aegle marmelos
239	Vilamichamver	-	Plectranthus vettiveroides
240	Vilamaram	-	Limonia acidissima
241	Vishnukiranthi	-	Evolvulus alsinoides
242	Vengayam	-	Alium cepa
243	Vendayam	-	Trigonella foenum
244	Vellarikai	-	Cucumis sativus
245	Vellarugu	-	Enicostemma axillare
246	Vellilothram	-	Symplocos racemosa
247	Vellulli	-	Allium sativum
248	Vettilai	-	Piper betle
249	Vembu	-	Azadirachta indica
250	Vel	-	Acacia nilotica
251	Velvel	-	Acacia leucophloea
252	Kudaivel	-	Acacia latronum
253	Pikkaruvel	-	Acacia farnesiana
254	Velai	-	Cleome viscosa
255	Thaivelai	-	Gynandropsis gynandra

Note: Questions for 80% of marks shall be taken from the aforesaid list of plants and the questions for rest 20% of marks shall be from the below list of plants *which can be studied by the students themselves with the guidance of the teacher.*

Sl. No.	<u>Tamil Name</u>	<u>Botanical Name</u>
1	Akrottu	- Juglans regia
2	Alisi virai	- Linum catharticum
3	Arukirai	- Amaranthus tristis
4	Annasipazham	- Ananas comosus
5	Araikirai	- Marsilea quadrifolia
Sl. No.	<u>Tamil Name</u>	<u>Botanical Name</u>
6	Alpagoda pazham	- Prunus domestica
7	Al-vallikizhangu	- Manihot esculenta
8	Attunetti	- Neptunia oleracea
9	Anai-katrashai	- Agave americana
10	Anai kunri	- Adenanthura pavonina
11	Anaippuliamaram	- Adansonia digitata
12	Rattai – peimarutti	- Anisomeles malabarica
13	Rattabolam	- Aloe barbadensis
14	Ezhathalari	- Plumeria rubra
15	Uka	- Salvadora persica
16	Uzhalathi	-
17	Usilam	-
18	Erisalai	-
19	Elumichan thulasi	- Ocimum gratissimum
20	Ezhilapalai	- Alstonia scholaris
21	Odukan	- Cleistanthus collinus
22	Kakkarikay	- Cucumis sativus
23	Kasa-kasa	- Papaver somniferum
24	Kadarpalai	- Argyreia nervosa
25	Kadar tengay	- Lodoicea maldivica
26	Kadara naraththai	- Citrus medica
27	Kalumichchamkai	-
28	Kavizh thumbai	- Trichodesma indicum
29	Kazhu-nir	- Nymphaea alba
30	Kalarva	- Salvadoria persica
31	Chirukalarva	- Salvadoria persica
32	Karkovai	- Melothria heterophylla
33	Kartamarai	- Smilax zeylanica
34	Kasa	- Memecylonum bellatium
35	Kasi rathnam	- Quamoclit pennata
36	Kattu elumichchai	- Atalantia malabarica
37	Kattu ellu	- Sesamum prostratum
38	Kattu kadugu	- Cleome viscosa
39	Kattu karuvappattai	- Cinnamomum iners
40	Kattu thumbai	-
41	Kattu pagal	- Momordica dioica
42	Kattu peipudal	- Trichosanthes lobata
43	☆ Kattu mullangi	- Blumea lacera

44	Kattu Vengayam	- Urginea indica
45	Kai-vallikkodi	- Dioscorea alata
46	Karamani	- Vigna unguiculata
47	Kavatambul	- Cymbopogon martinii
48	Kiranthinayagam	-
49	Kumizhmaram	- Gmelina arborea
50	Kumkkaththi	- Hiptage benghalensis
51	Kuruvich-chi	- Ehretia microphylla
52	Kuthambai	- Cantana indica
53	Kunthanpanai	- Caryota urens

Sl. No.	Tamil Name	Botanical Name
54	Kuvai kizhangu	- Maranta arundinacea
55	Koththavarai	- Cyamopsis tetragonoloba
56	Kodaga salai	- Rungia repens
57	Gopuram tangi	- Andrographis echinodes
58	Chanappu	- Crotalaria juncea
59	Saninayagam	-
60	Chavukkumaram	- Casuarina equisetifolia
61	Samanthipoo	- Chrysanthemum coronarium
62	Chayamaram	- Caesalpinia sappan
63	Chavarisimaram	-
64	Charaiparuppu	- Buchanania lanzan
65	Chinnikizhangu	-
66	Chukkankai	-
67	Chukkan kirai	- Rumex vesicarius
68	Chulukku nayagam	-
69	Suriyakanthi	- Helianthus annuus
70	Cheppu – nerunjil	- Indigofera enneaphylla
71	Chevaganar kizhangu	- Gloriosa superba
72	Peyavarai	- Cassia occidentalis
73	Thakkolam	-
74	Tamaraththam	- Avarrhoa carambola
75	Thara	- Fumaria parviflora
76	Thalippanai	- Corypha umbraculifera
77	Thillai	- Excoecaria agallocha
78	Thumbilkkai	- Diospyros speregrina
79	Thuringibin	- Alhagi aurorum
80	Thekku	- Tectona grandis
81	Naruvili	- Cordia dichotoma
82	Naganam	-
83	Nagathali	- Opuntia dillenii
84	Nanal	- Saccharum spontaneum
85	Nilakkadambu	- Asarum europaeum
86	Nilakumizh	- Gmelina asiatica
87	Nilappanai	- Curculigo orchioides
88	Nilavamanakku	-
89	Ninral chinungi	-
90	Niralasi	- Polygonum barbatum
91	☆Nirbrahmi	- Bacopa monnieri

92	Nirpula	- Phyllanthus reticulatus
93	Nirmel neruppu	- Ammania baccifera
94	Nettilingam	- Polyalthia longifolia
95	Neithar kizhangu	- Nymphaea pubescens
96	Pannimonthan kizhangu	- Trapanatans
97	Paruththi	- Gossypium herbaceum
98	Motchai	- Lablab purpureus
99	Chemparuththi	- Gossypium arboretum
100	Parangikai	- Cucurbita maxima
101	Panirpoo	- Rosa centifolia

Sl. No. Tamil Name

Botanical Name

102	Pakal	- Momorchica charantia
103	Palai	- Manikarah exandra
104	Piramiya vazhukkai	- Bacopa monniesi
105	Piray	- Streblus asper
106	Pilimbi	- Averrhoa bilimbi
107	Pilavai kolli	-
108	Pudal	- Trichosanthes cucumescina
109	Punnai	- Calophyllum inophyllum
110	Ponmusuttai	- Sida acuta
111	Manipungu	- Sapindus lausifolia
112	Musarkathilai	- Ipomea pes-caprae
113	Mavilangu	- Crateva magna
114	Munthiri	- Anacardium occidentale
115	Mullangi	- Raphanus sativus
116	Modagavalli	- Sterculia foetida
117	Valli	- Dioscorea esculenta
118	Chevalli	- Dioscorea purpurea
119	Vagai	- Albizia lebeck
120	Karuvagai	- Albizia odoratissima
121	Vadhuniai	- Prunus dulcis
122	Vizhalarisi	- Seed of red grass
123	Peru-lavangappattai	- Cinnamomum acrocarpum
124	Peyatti	- Ficus hispida
125	Vengai	- Pterocarpus marsupium
126	Aruvada	- Ruta chalepensis
127	Ezhuttani poondur	- Launaea pinnatifida
128	Karimulli	- Solanum anguini
129	Kanam vazhai	- Commelina benghalensis
130	Siththa	- Anona squamosa
131	Pallipundu	- striga lutea
132	Valendrabolam	- Commiphora myrrh
133	Ayil	- Chukrasia tabularis
134	Aththi	- Ficus microcarpa
135	Alivirai	- Lepidium sativum
136	Ireval chinni	- Rheu memodi
137	Ilanda maram	- Ziziphus mauritania
138	Ilavamaram	- Bombax ceiba
139	☆ Mulilavu	- Bombax malabaricum

140	Urulai kizhangu	- Solanum tuberosum
141	Elikkadilai	- Merremiae marginata
142	Eliyamanakku	- Jatropha curcas
143	Iyviri	- Diplocyclos palmatus
144	Kadambu	- Anthocephalus cadamba
145	Kadarpasi	- Gracilaria lichenoides
146	Kattukodi	- Cocculus hirsutus
147	Kanap-pundu	- Exacum pedunculatum
148	Kathakambu	- Uncaria gambir
149	Kambu	- Pennisetum typoideum
Sl. No.	<u>Tamil Name</u>	<u>Botanical Name</u>
150	Kaththari	- Solanum melongena
151	Karpasi	- Parmelia perlata
152	Kattamanakku	- Jatropha curcas
153	Kappikottai	- Coffea arabica
154	Kalen	- Agaricus campestris
155	Kitchilipazham	- Citrus aurantium
156	Kirauthitakaram	- Tabernaemontana divaricata
157	Kiliyural	-
158	Kilukiluppai	- Crotalaria retusa
159	Keeripundu	- Ophiorrhiza mungos
160	Kurattai	- Trichosanthes tricuspidata
161	Kezhvaragu	- Eleusine coracana
162	Kottikizhangu	- Aponogeton monostachyon
163	Kollu	- Macrotyloma uniflorum
164	Kollukkaivelai	- Tephrosia purpurea
165	Korukkaip-puli	- Pithecellobium duke
166	Kothumai	- Triticum aestivum
167	Gowrivalpul	-
168	Samai	- Panicum sumatrense
169	Chirupeyathi	- Ficus hispida
170	Chini	- Acalypha fruticosa
171	Churai	- Lagenaria siceraria
172	Sembu	- Colocasia esculenta
173	Cholam	- Sorghum vulgare
174	Thakarai (Usithakarai)	- Cassia tora
175	Thakkali	- Physalis minima
176	Tharuppai	- Desmostachyabi pinnata
177	Thinai	- Setaria italica
178	Thuvarai	- Cajanus cajan
179	Telkodu	- Heliotropium indicum
180	Thottar Chinungi	- Mimosa pudica
181	Naralai	- Cayratia pedata
182	Nagamalli	- Rhinacanthus nasuta
183	Payaru	- Vigna mungo
184	Pappali	- Casica papaya
185	Badampisin	-
186	Pathiri	- Stereospermum colais
187	☆ Barely	- Hordeum vulgare

188	Pirappan kizhangu	- Calanusrotang
189	Pinasimaram	- Sterculia foetida
190	Pavattai	- Pavetta indica
191	Pulluruvi	- Dendrophthoe falcata
192	Pulladi	- Desmodium gangeticum
193	Mantharai (red)	- Bauhinia purpurea
194	Mulam	- Citrullus vulgaris
195	Munnai	- Premna corymbosa
196	Varagu	- Paspalum scrobiculatum
197	Vallikodi	- Convolvulus repens

Sl. No.	Tamil Name	Botanical Name
198	Vizhuthi	- Cadaba trifoliata
199	Vishamunkil	- Crinum asiaticum
200	Vetchi	- Ixora coccia
201	Vendakai	- Abelmoschus esculantus
202	Verkadalai	- Arachis hypogea
203	Akasathamalai	- Pistia stratiotes
204	Anthimalli	- Mirabilis jalapa

Reference Books:

21. Gunapadam – Mooligai Vaguppu – by Dr.Murugesu mudaliar
22. Materia Medica – Vol I & II – by Dr.Nadkarani.
23. Mooligai Iyal – By – Dr.V.Arunachalam M.D.Siddha.

2. PAPER II -THATHU & JEEVAM (MATERIAMEDICA –METALS, MINERALS & ANIMAL KINGDOM)

- **Introduction to General Pharmacology with reference to Siddha drugs and principles.**
Introduction -Routes of drug administration- Absorption and distribution - Biotransformation - Pharmacokinetics - Drug excretion- Pharmacodynamics - Adverse drug reactions
- 11. Detailed study about the following raw drugs which includes
 1. Description, 2. Verupeyarkal (Synonyms), 3. Scientific name, 4. various names in regional languages, 5. Identification, 6. Availability, 7. Pothu gunam (General properties) 9. Suvai (Taste), Veeryam (Potency), Pirivu (Division), Specific action, 10. Organoleptic characters, 11. Therapeutic actions, 12. Alavu (doses), 13. uses 14. Name of different formulations pertaining to this drug. 15. Chemical constituents, 16. Nanju (Toxicity) if any and Nanju murivu (Antidote) 17. Suddhi (Purification)
- Classification of metals & minerals
- Study of Natpu charakku (Synergetic) and Pagai charakku (antagonistic drugs).
- Classification of drugs based on five elements
- Herbs containing Iron, Copper, Gold, Lead, Silver

I. Ulogangal –(Metals)

Sl. No	Tamil Name	English Name / Scientific Name
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1.	Ayam	Iron
2.	Ekkhu	Steel
3.	Kareyam	Lead
4.	Kandham	Magnetic Oxide of Iron
5.	Thambram	Copper
6.	Nagam	Zinc
7.	Thankam	Gold
8.	Mandooram	Ferrous Ferric Oxide
9.	Velleyam	Tin
10.	Velli	

II. Pancha Sootham -(Mercurial Compounds)

Sl. No	Tamil Name	English Name / Scientific Name
1.	Rasam	Mercury
2.	RasaSindooram	Red Sulphide of mercury
3.	Lingam	Cinnabar –Natural
4.	RasaKarpooram	Calomel – Hydragryum subchloride
5.	Veeram	Corrosive sublimate - Hydrogyrum perchloride

III. Pashanangal - (Metal / Mineral Salts)

Sl. No	Tamil Name	English Name / Scientific Name
1.	Anjanakal	Antimony Sulphide
2.	Kanthakam	Sulphur
3.	Gowripashanam	Yellow Oxide of arsenic (Synthetic)
4.	Thalagam	Yellow Arsenic Trisulphide
5.	Navapashanangal	Nine kinds of metal salts
6.	Panchapashanangal	Five kinds of metal salts
7.	Manosilai	Red Arsenic Disulphide(Realger)
8.	Mirudharsinki	Galena Sulphide (Lead ore)
9.	Vellaippashanam	Arsenum Acidum (White Arsenic)

IV. Karasaram - (Salts and Alkalies)

Sl. No	Tamil Name	English Name / Scientific Name
1.	Applakkaram	Sodium Carbonate impure
2.	Induppu	Sodium Chloride Impure (Rock Salt)
3.	Evatcharam	Potassium Carbonate impure
4.	Kanavaiodu	OS SEPIAE (Cuttle fishbone)
5.	Gandhiuppu	Salts of Sulphur
6.	Kalluppu	Salt found in lumps deposited on beds of rocks at the bottom of the sea
7.	Kariuppu	Sodium chloride (Common salt)
8.	Cheenakkaram	Alum (Aluminous Sulphate)
9.	Soodan	Camphor
10.	Navachcharam	Ammonium chloridum (Sal ammoniac)
11.	Pachaikarpooram	Borneo camphor (Crude camphor)
12.	Panchalavanam	Mixture of five salts



13.	Pidalavanam	Black salt
14.	Pooneeru	Fuller's earth
15.	Ambar	Ambra arasea
16.	Valaiyaluppu	Extracted salt from fuller's earth (Glass gall)
17.	Vengaram	Sodium biborate(Borax)
18.	Vediuppu	Potassium nitrate (Salt petre)
19.	Attuppu	A boiled salt obtained from saltpetre

V.Navamanigal –Gems

Sl. No	TamilName	English Name / Scientific Name
1.	Pavazham	Coral
2.	Muthu	Pearl

VI.Uparasam - Minerals (Natural Substances)

Sl. No	TamilName	English Name / Scientific Name
1	Appiragam	Mica
2	Annabedhi	Ferri Sulphas (Green vitriol)
3	Karpoorasilasathu	Crystalised foliated Gypsum
4	Kalnar	Asbestos
5	Karchunnam	Lime stone
6	Kadikkaram	Nitrate of silver
7	Kavikkal	Red ochre
8	Gomuthra silasathu	Asphaltum (Asphalt mineral piteh)
9	Thurusu	Cupric sulphate (Blue vitriol)
10	Nandukkal	Fossil stone crab
11	Palthutham	Sulphate of zinc

VII. JEEVAM -MATERIA MEDICA (ANIMALKINGDOM)

Sl. No	Tamil Name	English Name / Scientific Name
1)	Attai	Hirudo Medicinalis (Speckled leech)
2)	Aamai	Chelonia Turtle (Tortoise)
3)	Indrakopa poochi	Mutilla Occidentalis
4)	Iragukal	Feathers
5)	Eri vandu	Mylabris Sps.
6)	Elumbugal	Bones
7)	Onan	Calotis (Common Agama Lizard)
8)	Kasthuri	Moschus moschiferus musk
9)	Kzhingial	Ostrea edulis linn (Common oyster shell)
10)	Kulambugal	Hoofs

11)	Kulavikkoond	Wasps nest
12)	Kombarakku	Carteria Lacca (Lac)
13)	Kombugal	Horns
14)	Korochanam	Fel Borinum purifactum (Oxbile)
15)	Kozhi	Gallus domes (Domestic cock & hen)
16)	Sangu	Turbinella rapa (Conch Shell)
17)	Chanam	Dung
18)	Siruneer	Urine
19)	Thantham	Teeth
20)	Thean	Honey
21)	Nandu	Crab
22)	Nathai	Fresh Water Snail
23)	Palagarai	Cypraea moneta Linn (Cowry)
24)	Pantri	Sus indicushog (Pig)
25)	Pambu chattai	Snake's slough
26)	Palum pal porutkalum	Milk and milk products
27)	Pitchi	Bile
28)	Punugu	Viverra Civetta (Civet cat)
29)	Poo nagam	Earth Worm
30)	Min mini poochi	Fire fly
31)	Muttai oodugal	Egg shells
32)	Musiru muttai	Egg of Formica Smaragdina
33)	Muthuchippi	Mytilus margaritiferus (Pearl Oyster Shell)
34)	Mezhugu	Wax

Note: Questions for 80% of marks shall be taken from the aforesaid list and the questions for the rest 20% of marks shall be from the below list *which can be studied by the students themselves with the guidance of the teacher.*

Sl.No	Tamil Name	English Name/Scientific Name
1.	Thottippashanam	A pharmaceutical preparation of Arsenic combined with mercury & sulphur.
2.	Ekambacharam	A Prepared Salt (anefflorescent salt)
3.	Kadalnurai	Sea froth engendered by submarine fire
4.	Kaichulavanam	Salt produced from the earth impregnated with soda
5.	Thilalavanam	A salt derived from sessamum
6.	Komedagam	Onyx(Berly)
7.	Neelamani	Sapphire
8.	Pushparagam	Topaz, Yellow Topaz
9.	Maragadham	Emerald
10.	Manickam	Ruby(Carbuncle)
11.	Vaidooriyam	Cats eye (Chrysoprase)
12.	Vairam	Diamond
13.	Kal-matham	
14.	Nimilai	Bismuth
15.	Sathirabedhi	
16.	Alkattipatchi	
17.	Udumbu	Varanus Sps(Monitor)

18.	Kaandamirugakombu	Rhinoceros unicornis
19.	Sura	Squalus carcharius(Shark)
20.	Nariecham	Jackal's excreta
21.	Puli	Tiger
22.	Mayil	Pavo Cristatus Linn (Peacock)
23.	Maan	Deer
24.	Mudhalai	Crocodills porosus(Crocodile)
25.	Yanai	Elephas indicas(Elephant)

Reference books:

- Text of Gunapadam – Thathu Jeeva Vaguppu – Vol. II & III – by Dr. R. Thiagarajan
- Pathartha Guna Chindamani
- Pathartha Guna Vilakkam – Kannusamy
- Materia Medica - Vol. I & II – by Dr. Natkarni
- Siddha Vaidhya Thirattu – by Dr. C. S. Uthamarayan
- Pharmacology & Pharmacotherapeutics - by R. S. Satoskar
- Drug testing protocol for ASU Drugs – Published by PLIM

MARKS DISTRIBUTION FOR PRACTICAL FOR GUNAPADAM MARUNTHIYAL PAPER I & II

MAXIMUM MARKS : 100

- | | | |
|-----------|--|-----------------|
| 1. | PURIFICATION METHODS | 30 MARKS |
| 2. | RAW MATERIALS IDENTIFICATION- (5 SPOTTERS) | 20 MARKS |
| 3. | QUALITATIVE ANALYSIS OF INORGANIC & PHYTOCHEMICALS CONSTITUENTS – LABORATORY TESTS- | 20 MARKS |

TO DETECT THE PRESENCE OF -Aluminium, calcium, copper, iron, Magnesium, Mercury, Pottasium, Sodium, Carbonates and Bicarbonates, Sulphates, Chlorides

TO DETECT THE PRESENCE OF -Acids, Alkaloids, Amino acids and proteins, carbohydrates, Fats and oils, flavanoids, Glycosides, Lignans, Phenols, Quinones, Resins, Saponins, Steroids, Tannins, Terpenoids.

- | | | |
|-----------|-----------------------------------|-----------------|
| 4. | PRACTICAL ASPECT VIVA VOCE | 30 MARKS |
|-----------|-----------------------------------|-----------------|

3. GUNAPADAM-MARUNTHAKAVIYAL (PHARMACEUTICALS) PAPER-I

- | | |
|--|-------------------|
| I. Pharmacy & Siddha Instrumentations | (20 Marks) |
| II. Siddha Formulations in Siddha Formulary of India (SFI) & Other related topics | (80 Marks) |

1. (a)PHARMACY

- Introduction
- Raw drug store(RDS)
- Preparation section
- Prepared medicine store (PMS) as per Theraiyar quotes.

I (b) Rules & Regulation Of Pharmacy (GMP guidelines)

I (c) DISPENSING PHARMACY

- Prescription Writing
- Medical abbreviations
- Labelling
- Packing
- Storage of Medicine
- Dosage Schedule

I (d) SIDDHA INSTRUMENTATIONS:

(A).Karuvikal (Equipments)

(B). Enthiram (Apparatus)

(C)Modern instrumentation

12. Disintegrator
13. Micro pulveriser
14. Pill cutting and making machine
15. Tablet compression machine
16. Capsule filling machine
17. Ointment manufacturing Machine
18. Syrup making machine
19. Ball mill
20. End runner / Edge runner
21. Tray Dryer
22. Chopping machine
23. Mass mixer, Granulator
24. Sieve shaker
25. Juice Expeller
26. Planetary mixer

II. Siddha Formulations In Siddha Formulary of India – SFI & Other Related topics (80 Marks)

1. MARUNTHU : Definition - Types of Medicine

A. **ULMARUNTHUKAL (Internal medicine) -32**

Definition for each, Classification with examples, Ayul kaalam(Shelf Life periods), Dosage Schedule.

9. Surasam	3. Manappagu	3. Pathangam
10. Saaru	4. Rasayanam	4. Chendhuram
11. Kudineer	5. Elagam	5. Parpam
4) Karkam	15) Ennai	26) Kattu
5) Utkali	16) Mathirai	27) Urukku
6) Adai	17) Kaduhu	28) Kalangu
7) Choranam	18) Pakuvam	29) Sunnam
8) Pittu	19) Thenural	30) Karbam
9) Vadagam	20) Theeneer	31) Saththu
10)Vennai	21) Mezhugu	32) Gurukulihai
11)Nei	22) Kulambu	

(B) **PURA MARUNTHUKAL (External Medicine) (32)**

Definition for each, Classification with examples, Ayul kalam (Shelf Life periods).

1)kattukal	2)Patru	3)Otradam	4)Poochu	5)Vedhu	6)Pottanam	
7)Thokkanam	8) Pugai	9)Mai	10)Podithimirdhal	11) Kalikkam	12)Nasiyam	
13)Uthal	14)Nasikaparaam	15)Kalimbu	16)Cheelai	17)Neer	18)Varthi	
19)Chuttikai	20)Salakai	21)Pasai	22)Kali	23)Podi	24)Murichal	25)Keeral
26)Karam	27)Attaividal	28)Aruvai	29)Kombu kattal	30)Urinchal	31)Kurithi	
Vangal	32)Peechu					

2. **ALAVUGAL-(Measurements)**

- Neetal Alavu
- Niruthal Alavu
- Mugathal Alavu
 - Comparison of (a), (b) and (c) with modern metrics and Measurements.

3. **PRINCIPLES OF DRUGPREPARATION**

- Eaka mooligai prayaogam
- Marana prayogam
- Dravaga prayogam
- Cheyaneer prayogam
- Muppu chunna prayogam

Special study on Muppu

- Definition
- Basic principles of Muppu
- Types of Muppu-Vadha Muppu- Vaithiya Muppu-YogaMuppu
- Uses of Muppu

4. THOGAICHARAKUKAL

1. Eru manjal	2. Eru nannari	3. Thiri Kadugu	4. Thiri Saatham
5. Thirikantham	6. Thiri Kaayam	7. Thiri Koobam	8. Thiripathiri
9. Thiri Sukantham	10. Thiripalaa	11. Thiriparuvam	12. Mukkani
13. Thirimanjal	14. Thirimoolam	15. Thirinimbam	16. Panja Saatham
17. Mukkootu Nei	18. Sathur Saatham	19. PanjaAmirtham	20. Aingayam
21. PanjaThiraviyam	22. Panja Moolam	23. Panja Vaasam	24. Atta Varkkam
25. Panjavarakkam	26. Elagupanja Moolam	27. Siru panja moolam	28. Moolatch Sathurvarkkam
29. Ainthennai	30. Panjaakini Moolam	31. Parimala varkkam	32. Panjamathi
33. Atta Santhanam	34. Attakkayam	35. Atta Moolam	36. Menpodipanjaangam
37. Thirilavangam	38. Mutchiragam	39. Nalangumaa	40. Pathinenmoolam
41. Panjakavyam	42. Aingkoolam	43. Sathursaaram	44. Panjavambu
45. Panjamooli	46. Panjakaaram	47. Panja Kaayam	48. Aararisi
49. Panjaalaikkaram	50. Panja koolam	51. Dhasamoolam	52. Pancha thiraviyam

5. LIST OF FORMULATIONS AS PER SFI, PART-I

Sl.No	Class of Formulation	Name of Formulation
1.	KUDINEER	ADATHODAI KUDINEER
		KAPHA JURA KUDINEER
		NILAVEMBU KUDINEER
		NERINJIL KUDINEER
		NOCCIK KUṬINĪR
2.	CHOORANAM	ASHTA CHOORANAM
		AMUKKARA CHOORANAM
		ELATHY CHOORANAM
		KALADCHI CHOORANAM
		SIVADHAI CHOORANAM
		SEENDHIL CHOORANAM
		ASAI CHOORANAM
		CHUNDAIVATRAL CHOORANAM
		THALISADHI CHOORANAM
		TRIKADUGU CHOORANAM
		TRIPHALA CHOORANAM
		NILAVAGAI CHOORANAM
		PANCHADEEPAKINI CHOORANAM
		PARANGIPATTAI CHOORANAM
3.	VADAKAM	INJI VADAKAM
		IMPURAL VADAKAM
		THALISADHI VADAKAM

		VAZHAIPOO VADAKAM
4.	VENNAI	KUNGILIYA VENNAI
5.	MANAPPAGU	ADATHODAI MANAPPAGU MATHULAI MANAPPAGU
6.	NEY	SEENDHIL NEY SENKOTTAI NEY THANNEER VITTAN NEY THUTHUVALAI NEY BRAHMI NEY VALLARAI NEY VENPOOSANI NEY
7.	RASAYANAM	INJI RASAYANAM THIPPILI RASAYANAM PRANGIPPATTAI RASAYANAM
8.	ILAKAM	KARISALAI ILAKAM KARUNAI ILAKAM KESARI ILAKAM SARAPUNKA VILVATHI ILAKAM THETTRAN KOTTAI ILAKAM NELLIKAI ILAKAM VENPOOSANI ILAKAM
9.	THAILAM	LEGU SANDHANATHI THAILAM LEGU VISAMUSHTI THAILAM KALINGADHI THAILAM KALARCHI THAILAM KEEZHANELLI THAILAM KUNTHIRIKKA THAILAM KAYYAN THAILAM SITTRAMUTTI THAILAM SITTRAMUTTI MADAKKU THAILAM CIRATTAI THAILAM SEERAGA THAILAM CHUKKU THAILAM NOCCHI THAILAM PUNKA THAILAM MATHAN THAILAM MERUGULLI THAILAM MEGANADHA THAILAM VATHAKESARI THAILAM
10.	MATHIRAI	LAVANGATHI MATHIRAI KAKKANA MATHIRAI SAMBIRANI KULIGAI SWASAKUDORI MATHIRAI NEERKOVAI MATHIRAI BRAHMANANDHA BAIRAVAM MURUKKANVIDHAI MATHIRAI
11.	THEENEER	OMA THEENEER SOMBU THEENEER
12.	MEZHUGU	MALAKKUDARA MEZHUGU
13.	KUZHAMBU	KUMATTI KUZHAMBU
14.	PATHANGAM	PARANGIPATTAI PATHANGAM
15.	PARPAM	KUNKILIYA PARPAM
16.	KARPAM	PAVANAKADUKKAI

17.	PATRU	MUSAMPARAPATRU
18.	POOCHU	PADAI SANKARAN-1
		PADAI SANKARAN-2
19.	MAI	ILANEER KUZHAMBU
		PAZHAMKIRAMBUPAKKUVA VENNAI

Reference Books:-

6. Maruthu Sei Iyalum Kalaiyum. By.Dr. Deva Asirvathamsamuel.
7. Formulary of Siddha I & II - Published by Govt. of India.
8. Formulary of Siddha – Published by IMPCOPS.
9. Siddha Vaidya Thiruttu – Dr. C.S.Uthamarayan.
10. Gunapadam Mooligai Vagappu by K.S. Murugesamudaliyar.
11. Gunapadam Thathu – Jeevam by Dr. R.Thiyagarajan.
12. Thylavarka Surukkam - by Theraiyar.
13. Chihitcha Rathna Deepam – Published Rathna Nayakkar & sons.
14. Quality Control Standards for certain Siddha formulations – Published by central council for Research in Ayurveda and Siddha.
15. Protocol for Drug Testing for ASU Drugs by PLIM.



GUNAPADAM - MARUNTHAAKKAVIYAL (PHARMACEUTICALS) PAPER II

I. Siddha Formulations in the Gunapadam Thathu Jeevam Text & Siddha Formulary of India – SFI and Related Topics (80 Marks)

II. Drug standardization & Medical geology

(20 Marks)

**I. (a) Siddha Formulations in the Gunapadam Thathu Jeevam Text
(b) Siddha Formulations in SFI**

Sl.No	CLASS OF FORMULATION	NAME OF FORMULATION
1.	CHLOORANAM	MAYIL IRAGAATHI CHLOORANAM
2.	RASAYANAM	KANTHAGA RASAYANAM
3.	TAILAM	KANTHAGA SUDAR TAILAM
4.		KARAPPAN TAILAM.
5.		MATHAN TAILAM (PACHAI ENNAI)
6.		MAYANA TAILAM (MEZHU)
7.		VIRANA SANJEEVI TAILAM.
8.		VELLAI ENNAI (POORA ENNAI)
9.	MATHIRAI	KASTHURI MATHIRAI
10.		KOROSANAI MATHIRAI.
11.		SANTHA SANTHIROTHAYA MATHIRAI.
12.		PACHAI KARPOORA MATHIRAI.
13.		BALA SANJEEVI.
14.		BRAMANANTHA BAIRAVAM.
15.		VASANTHA KUSUMAGARAM
16.		VISHNU CHAKKARA MATHIRAI.
17.	MELUGU	RASA MELUGU.
18.		RASAGANDHI MELUGU.
19.		KANTHI MELUGU.
20.		NAVAUPPU MELUGU
21.		PANCHA SOOTHA MELUGU
22.		MAHAVEERA MELUGU.
23.	KULAMBU	AGASTHIYAR KULAMBU.
24.		JATHI JAMBEERA KULAMBU.
25.	CENTURAM	AYAKANTHA CENTURAM.
26.		AYA CENTURAM
27.		AYAVEERA CENTURAM.
28.		ANNABEDI CENTURAM.
29.		IRASA CENTURAM.
30.		ILINGA CENTURAM - 1
31.		ILINGA CENTURAM - 2
32.		ULOKA MANDOORA CENTURAM
33.		KAADIKARA CENTURAM
34.		KAANTHA CENTURAM
35.		GOWRI CHINTHAMANI
36.		CANDA MARUTHA CENTURAM.

37.		THANGA CENTURAM.
38.		THAMBIRA CENTURAM (CHEMBU)
39.		THALAGA CENTURAM.
40.		NAAGA CENTURAM
41.		PADIGA LINGA CENTURAM,
42.		VEDI ANNABEDI CENTURAM.
43.		VELLI CENTURAM
44.	PARPAM	AMAI OTTU PARPAM
45.		KANTHAGA PARPAM.
46.		KARUVANGA PARPAM.
47.		KUNGILIYA PARPAM.
48.		SANGU PARPAM.
49.		SIRUNGI PARPAM (MAAN KOMBU)
50.		SILASATHU PARPAM.
51.		CHEMBU PARPAM.
52.		THANGA PARPAM
53.		THALAGA PARPAM
54.		NANDUKKAL PARPAM
55.		NATHAI PARPAM
56.		NAAGA PARPAM
57.		PANCHA LAVANA PARPAM.
58.		PADIGARA PARPAM
59.		PALAGARAI PARPAM.
60.		PAVALA PARPAM
61.		PERANDA PARPAM - 1
62.		PERANDA PARPAM - 2
63.		MUTHU PARPAM
64.		MUTHUCHIPPI PARPAM
65.		VENGARA PARPAM
66.		VELVANGA PARPAM
67.		VELLI PARPAM
68.	KARUPPU	KASTHURI KARUPPU
69.		SIVANAR AMIRTHAM
70.		THALAGA KARUPPU
71.	KATTU	ILINGA KATTU
72.		POORA KATTU
73.		VELLAI PAADANA KATTU
74.	CHUNNAM	VEDIUPPU CHUNNAM.
75.		VELVANGA CHUNNAM
76.	KARPAM	AYA BIRUNGARAJA KARPAM
77.		AYA SAMBEERA KARPAM
78.		IRUNELLI KARPAM
79.	EXTERNAL / TOPICAL APPLICATIONS	ILANEER KUZHAMBU.
80.		PAZHA KIRAMBU PAKKUVA VENNAI.
81.		KANKAASA MATHIRAI
82.		AMIRTHA VENNAI (SAVVERA KUZHUMBU)

Sl.No	CLASS OF FORMULATION	NAME OF FORMULATION
83.		KIZHINGAL MELUGU.
84.		MEGHA VIRANA KALIMBU
85.		VANGA VENNAI.
86.		VELLAI MEZHUGU.
87.		PADIGARA NEER
88.		VENKARA PODI

I (c) PATHIYAM &

ANUBANAM PATHIYAM

- Definition
- Pathiyathirku aagum porutkal
- Pathiyathiruku aagaporutkal
- Pathiyathin vagaigal - Itcha pathiyam, kadum pathiyam, Miga kadum pathiyam, Rasa pathiyam, Aya pathiyam and etc.

ANUBANAM (Vehicle) & THUNAI MARUNTHU (Adjuvant)

- Definition
- Examples

I (d) ADULTERATION OF SIDDHA DRUGS

- Definition for Adulteration
- Adulteration – Types with Examples
- Reasons of adulteration

II. DRUG STANDARDISATION & MEDICAL GEOLOGY

a. DRUG STANDARDISATION

- Definition
- Introduction to Raw Drug Standardisation
- Introduction to Drug Standardisation
- Brief about Drugs and Cosmetic Act and Magic remedial Act
- Drug Regulatory bodies (Central and State)
- Introduction to Intellectual Property Rights(IPR)
- *Field visit to any one GMP certified pharmaceutical company and drug testing Lab.*

b. MEDICAL GEOLOGY:

- Introduction to the Basics of Medical Geochemistry.
- Mineral Identification Basics.
- Brief Geo-chemical & Zoological description of Thathu and Jeeva Porutkal

Reference books:

1. Gunapadam Thathu – Jeevam by Dr. R.Thiyagarajan.
2. Formulary of Siddha I & II - Published by Govt. of India.
3. Siddha Vaidya Thirattu – Dr. C.S.Uthamarayan.
4. <http://www.gc.maricopa.edu/earthsci/imagearchive/index.htm>
5. Aswathanarayana, U. Professor (1994) Trace Substances, Environment and Health.
6. Schauss, Alex (1995): Minerals and Human Health
7. ISM (2001): National Formulary of Unhand Medicine, Ed 1, Part III, pp 59-68, 115-117, Department of Indian Systems of Medicine and Homeopathy, Ministry of health and Family

GUNAPADAM –MARUNTHAAKKAVIYAL- PRACTICALS

Sl.No	Class of Formulation	Name of Formulation
01	KUDINEER	ADATHODAI KUDINEER
02		NILAVEMBU KUDINEER
03	CHLOORANAM	ELATHY CHOORNAM
04		NILAVAGAI CHOORANAM
05		INDHUPPU CHOORANAM.
06	VADAKAM	THALISATHI VADAKAM
07		INJI VADAKAM
08	VENNAI	KUNGILIYA VENNAI
09	MANAPPAKU	MATHULAI MANAPPAKU
10		ADATHODAI MANAPPAGU
11	NEI	VALLARAI NEI
12	RASAYANAM	INJI RASAYANAM.
13		KANTHAGA RASAYANAM
14	ILAKAM	PANCHADEEPAKINI ILAKAM
16	THAILAM	PINDA THAILAM
16		ANDA THAILAM
17		KEEZHANELLI THAILAM
18		MATHAN THAILAM
19		VELLAI ENNAI (POORA ENNAI)
20		MOOLAKUDORI THAILAM
21		CHITRAMOOLA THAILAM
22	MATHIRAI	SWASAKUDORI MATHIRAI
23		URAI MATHIRAI
24		MURUKKANVIDHAI MATHIRAI
25		SANTHA SANTHIROTHAYA MATHIRAI
26		BRAMANANTHA BAIRAVAM.
27	THEENEER	SOMBU THEENEER
28		OMA THEENEER
29	MEZHUGU	MALAKKUDARA MEZHUGU
30		KANTHI MELUGU.
31	KUZHAMBU	JATHI JAMBEERA KULAMBU.
32	CENTURAM	ANNABEDI CENTURAM.
33		PADIGA LINGA CENTURAM
34	PARPAM	SILASATHU PARPAM.
35		NANDUKKAL PARPAM
36		SANGU PARPAM.
37	KATTU	LINGA KATTU
38	EXTERNAL APPLICATIONS	THALAI VALI PASAI
39		CHANDRA KALA LEBAM
40		VANGA VENNAI.

DISTRIBUTION OF MARKS:

- | | |
|--|---------|
| • One exercise from the above list----- | 60marks |
| • Practical Record &Industrial observation ----- | 10marks |
| • Practical aspect Viva voce----- | 30marks |

SYLLABUS FOR THIRD PROFESSIONAL BSMS

1. NOI NAADAL PAPER – I

(SIDDHA PATHOLOGY)

Total Hours : 200

1. Introduction to Siddha Pathology

(5 Hrs)

1. 1. Definition of Noi and Noi Naadal
1. 2. Importance of Noi Naadal
1. 3. Etiology of Diseases as per Siddha system.
1. 4. Maruthuvanin Ilakkanam according to Siddhars
1. 5. Noi intri vazha Kaayakalpam- mani manthira avizhtham

2. Interrelations between five elements, six tastes and three humours – abnormalities during derangements.

(5 Hrs)

3. Mukkutra iyal (Vatham – Pitham – Kapham)

(10 Hrs)

- 3.1 Predominant locations – properties – Functional varieties – physiological role (3 Hrs)
- 3.2 Pathological conditions (increased & decreased features) (4 Hrs)
- 3.3 Thanilai valarchi – Vetrunilai valarchi – Thannilai adaithal). (3Hrs)
- 3.4 Derangements of Uyir thathukal (15 Hrs)

4. Thega ilakkanam correlated with diseases

(10 Hrs)

5. Naadi:

(15 Hrs)

- 5.1. Definition – locations
- 5.2. Vatha Naadi, Pitha Naadi, Kapha Naadi, ratio of Naadi , Conjoined Naadi
- 5.3. Dhasa Naadigal-Pathways-Relationship between dasanadi and dasavayu.
- 5.4. Pulse variations according to seasons
- 5.5. Preponderant period of Vatha, Pitha & Kapha Naadi – conditions responsible for irregular pulse rhythm – prognosis of a disease based on Naadi.
- 5.6. Boothha naadi and Pancha Boothha Naadi
- 5.7. Guru Naadi and its abnormalities
- 5.8. Abnormal findings of malpractice of Saram
- 5.9. Amirthanilai
- 5.10. Diagnosis of pregnancy and infertility through Naadi in various concepts

6. Fourteen Natural Urges and the Clinical manifestations while suppressing them.

[5 Hrs]

7. Asaathiya, Marana Naadikal and Kurigunangal (Fatal signs & symptoms)

[5 Hrs]

8. Ennvagai Thervukal

[10 Hrs]

- 8.1 Examination through Naadi
- 8.2 Examination through Sparism
- 8.3 Examination through Naa

- 8.4 Examination through Niram
 - 8.5 Examination through Mozhi
 - 8.6 Examination through Vizhi
 - 8.7 Examination through Malam
 - 8.8 Examination through Moothiram- Neerkkuri , & Neikkuri .
 - 8.8.1 Neerkkuri: (Urine general examination) – Alavu (Quantity), Niram (colour), Manam (odour), Nurai (froth), Edai (Consistency/Density) – Enjal (Deposits)
 - 8.8.2 Neikkuri : The different changes in the oil dropped on the urine to be observed
 - 8.9 Diagnosis of diseases, curable and incurable condition through Ennvagai Thervukal
- [3 Hrs]**
9. Special Diagnostic Methods in Siddha System
 - 9.1 Manikkadai Nool (Wrist circumetric findings)
 - 9.2 Thoothuvan Ilakkanam
 - 9.3 Maruthuva Jothidaviyal -Concepts of jothidam in diagnosis
 - 9.4 Pancha patchi sasthiram - Concepts of Pancha patchi sasthiram in diagnosis
- [5 Hrs]**
10. Seven physical constitutions (Udal thathukkal)

formation of udal thathukal, ubha thathukal and & Malangal (feaces, Urine & sweat increased & decreased features) –Uyir anal- kukki anal
 11. Digestive fire (Udal thee) -Geographical Classifications & Seasonal variations (Nilamum pozhuthum) – Appropriate time for medications.
 12. Primary causes of various diseases according to Therayar.
 13. Worms and infectious diseases (Ottu noigal)
- [3 Hrs]**
[2 Hrs]
[10 Hrs]
- 14. DISEASES: [Text Book S. No. 2]**

The following headings should be covered for the following diseases. Veru peyar, Noi kaaranam, mukkutra verubadu, Noyin murkurigal, pothukkurigal, noi enn, signs and symptoms of types of the diseases, Naadi nadai, Theerum Theeratha Nilai (Prognosis).

Sl. No.	Topics	Teaching Hours
1.	Suram	5 hrs
2.	Mukkadaippu	2 hrs
3.	Irumal	2 hrs
4.	Irraippu	2 hrs
5.	Ilaippu	2 hrs
6.	Thamaraga Noi	2 hrs
7.	Athi Kurathi Azhal Noi	2 hrs
8.	Vaanthi	2 hrs
9.	Gunmam	2 hrs
10.	Athisaaram	2 hrs
11.	Kirani	2 hrs

12.	Nina Kalichal	2 hrs
13.	Kaleeral Noi	2 hrs
14.	Maneeral Noi	2 hrs
15.	Paandu	2hrs
16.	Sobai	2 hrs
17.	Kaamalai	2 hrs
18.	Peruvayiru	5 hrs
19.	Siru Neer Noigal	
19.1.	Siruneer Perukkal Noi	5 hrs
19.2.	Siruneer Arukkal Noi	5 hrs
20.	Vaatha Noigal	10 hrs
21.	Piththa Noigal	5 hrs
22.	Kabha Noigal	5 hrs
23.	Keel Vaatham	3 hrs

PRACTICALS

Major:

[40 Hrs]

- Clinical applications of Three Humours (Vaatham, Piththam, Kabham)
- Interpretation of Enn vagai Thervukal
- Examination of Ezhu Udal Thathukkal

Minor:

[60 Hrs]

- Manikkadai Nool
- Neerkkuri and Neikkuri
 - Clinical applications of individual humours
 - Clinical applications of individual Udal Thaathu
 - Clinical applications of Enn Vagai Thervu
 - Clinical applications of pregnancy and infertility

Theory Examination Scheme

Total Time 3 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Total marks
Long answer (Essay type)	2	15	30
Notes	10	5	50
Short answer	10	2	20
Grand Total			100

Practical / Clinical Examination Scheme

Total Time 2 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Time (minutes)
Major Practical	1	50	90
Minor Practical	1	20	30
Viva Voce	-	30	-
Total		100	120

TEXT BOOKS

1. Shanmugavelu, Noinaadal_Noimudanaadal Thirattu (Part 1) 2nd edition, Chennai, Department of Indian Medicine & Homeopathy, Govt of Tamil Nadu, 2003
2. Shanmugavelu, Noinaadal - Noimudanaadal Thirattu (Part2) 2nd edition, Chennai, Department of Indian Medicine & Homeopathy, Govt of Tamil Nadu, 2003

REFERENCES

1. Yugi Vaithiya Chinthamani, Chennai, Department of Indian Medicine & Homeopathy, Govt of Tamil Nadu, 2012
2. Venugopal, P. M. Udalthathuvam, Chennai, Department of Indian Medicine & Homeopathy, Govt of Tamil Nadu, 2014
3. Kuppusamy Mudaliyar, Siddha Maruthuvam Pothu, Chennai, Department of Indian Medicine & Homeopathy, Govt of Tamil Nadu, 2012.
4. Uthamarayan K. S. Siddha Maruthuvanga Churukkam, 3rd edition, Chennai, Department of Indian Medicine & Homeopathy, Govt of Tamil Nadu, 2003
5. Pillai, Saravanamuthu, Periyagnanakovai, Chennai, Rathna Nayakar and Sons
6. Rajaram, Kannan, Varma Maruthuvam, Kanniyakumari, A.T.V.S Siddha Medical College ,2008 (ISBN-13-978-93-80288- 15-4)
7. Rajaram Kannan, Varma Maruthuvathin Adipadaigal, Kanniyakumari, A.T.S.V. Siddha Medical College, 2007 (I.S.B.N-13-978-81-907684-0-2)
8. Sivashanmuga Raja. S, Maruthuvamum Jothidamum (Tamilar Vazhvil Siddha Maruthuvam) 1st Edition, Yazhpaanam, Siddha Maruthuva Valarchi Kazhagam, 2006
9. Ramachandram. S. P. Agathiyar Kanma Kandam, Chennai, Thamarai Noolagam,1995
10. Mohan R.C., Pulippaani Vaidhiyam (Moolamum Uraiyum) 3rd edition, Chennai, Thamarai Noolagam, 2016

11. Shanmugavelan. A (editor). Theriyar aruli seitha siruneerkuri sothanai, 3rd edition, Thanjavur, Saraswathy mahal library, 2005
12. Ramachandran.S. P. (editor) Theriyar Neerkuri Vaidhyam, Chennai, Thamarai Noolagam 2015
13. Jeya Venkatesh J, Siddha Diagnostic Uroscopy, 1st Edition, Madurai, Shanlax Publications 2018, ISBN:978-9388398060

*available in public domain at <http://noolaham.org>

SUBJECT: NOI NAADAL PAPER- II
(Principles of Modern Pathology)

Total Hours:150

GENERAL PATHOLOGY

- | | |
|--|-----------------|
| 1 Introduction of Pathology
1.1 Definition, Terminology and evolution of pathology.
1.2 Classification of Pathology | [5 hrs] |
| 2 Techniques for the study of pathology
2.1 Applications of microscope and electron microscopes
2.2 Cytogenetic and its applications
2.3 Molecular pathology | [10 hrs] |
| 3 Cell injury and its adaptations
3.1 Etiology pathogenesis and morphology of cell injury (irreversible and reversible) .
3.2 Pigments (endogenous and exogenous).
3.3 Cellular adaptations and aging. | [15 hrs] |
| 4 Immunopathology
4.1 HLA system.
4.2 Diseases of immunity (AIDS)
4.3 Autoimmune diseases (SLE. Scleroderma, Sjogern"s syndrome).
4.4 Transplant rejection.
4.5 Amyloidosis (Pathogenesis, Classification, systemic amyloidosis and organal changes in amyloidosis) | [10 hrs] |
| 5 Haemodynamics
5.1 Disturbances of body fluids and electrolytes (oedema, over hydration, dehydration)
5.2 Haemodynamic disturbances (disturbances in volume and obstructive nature- hyperemia, congestion and morphology of CVC of organs, thrombosis, ischemia, Infraction) | [20 hrs] |
| 6 Inflammation and wound healing
6.1 Acute and chronic inflammation (Pathogenesis, Regulation, Morphology Systemic effects and fate of inflammations)
6.2 Chronic inflammatory diseases (TB, Syphilis, Sarcoidosis, Leprosy Action mycosis).
6.3 Healing-(Regeneration, repair, wound healing, Fracture healing) . | [10 hrs] |
| 7 Gene and chromosomal pathology
7.1 Introduction to genetic diseases | [10 hrs] |

- 7.2 Developmental defects
- 7.3 Cytogenetic (Karyotypic) abnormalities.
- 7.4 Storage diseases
- 7.5 Disorders with multifactorial inheritance.

8 Infectious diseases [15 hrs]

- 8.1 Diseases caused by bacteria- Plague, Anthrax, Pertussis, and Botulism.
- 8.2 Diseases caused by virus- Yellow fever, Dengue Hemorrhagic fever, SARS, Herpes, Rabies
- 8.3 Diseases caused by fungi- Mycetoma, Candidiasis.
- 8.4 Diseases caused by Parasites- Amoebiasis, Malaria, Filariasis, Cysticercosis, TORCH complex.

9 Neoplasia [10 hrs]

- 9.1 Microscopic features of tumours.
- 9.2 Carcinogenesis- molecular, Physical, Chemical and Biological.
- 9.3 Characteristics of tumours- Growth, Invasion, Metastasis.
- 9.4 Prognostic markers, Grading and staging.
- 9.5 Para neoplastic syndromes.
- 9.6 Lab diagnosis of cancers.

10 Environmental and Nutritional Diseases [15 hrs]

- 10.1 Alcoholism, Thermal and radiation injury
- 10.2 Obesity
- 10.3 Protein energy malnutrition
- 10.4 Deficiency diseases of vitamins and trace elements
- 10.5 Cancer diet.

11 Hematopoietic System [15 hrs]

- 11.1 RBC- Anemia and classifications, Iron deficiency anaemia, Sideroblastic, Megaloblastic, Pernicious, haemolytic anaemias, hereditary anemias, Aplastic anemia.
- 11.2 WBC- Leukemia
- 11.3 Platelets- Thrombocytopenia
- 11.4 Hemorrhagic diseases- hemophilia
- 11.5 Transfusion reactions.

12 Clinical Pathology [15 hrs]

- 12.1 Haematology
- 12.2 Examination of Sputum for AFB.
- 12.3 Examination of Urine
- 12.4 Examination of Faeces
- 12.5 Blood smear examination
- 12.6 Widal Test
- 12.7 Vaginal Smear.
- 12.8 Serological test- VDRL – Elisa Test – Hbs Ag, RA factor – ASO Titre
- 12.9 Skin – Skin clipping procedure.
- 12.10 Liver Function Tests, Renal Function Tests.
- 12.11 Radiology

PRACTICALS

(Total 100 Hours)

- 1 Haematology- Bleeding Time, Clotting Time, Cell counts – Rbc, Wbc and platelets, ESR, Hb
- 2 Serology- Widal test, RA factor, ASO titer, VDRL, Hbs Ag

- 3 Smear - Vaginal smear examination
- 4 Urine Examinations- Normal and Abnormal constituents.
- 5 Faeces- Morphology of worms like ascaris, Ankylostoma, Enterobius vermicularis.
- 6 Sputum for AFB.
- 7 Radiology
 - 7.1. Basic principles
 - 7.2. Osteology- Fracture, Dislocation and tumor
 - 7.3. Respiratory system- COPD, TB, Pleural effusion.
 - 7.4. CVS- Cardiomegaly.
- 8 Slides (Histopathology & Haematology)
 - 8.1. Fatty liver.
 - 8.2. Liver Cirrhosis
 - 8.3. PCOD
 - 8.4. Ovarian Cyst & Carcinoma
 - 8.5. Uterus- Fibroid, Endometriosis, Carcinoma
 - 8.6. Fibroadinoma breast.
 - 8.7. Appendicitis.
 - 8.8. Colloidal Goiter.
 - 8.9. CML
 - 8.10. AML.
 - 8.11. ALL.
 - 8.12. CLL.
 - 8.13. Iron deficiency aneamia
 - 8.14. Sickle cell aneamia.
 - 8.15. Aplastic anemia.
- 9 Specimens
 - 9.1. Fatty liver.
 - 9.2. Liver Cirrhosis
 - 9.3. PCOD
 - 9.4. Ovarian Cyst & Carcinoma
 - 9.5. Uterus- Fibroid, Endometriosis, Carcinoma
 - 9.6. Fibroadenoma breast.
 - 9.7. Appendicitis.
 - 9.8. Spleenomegaly.

Theory Examination Scheme

Total Time 3 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Total marks
Long answer (Essay type)	2	15	30
Notes	10	5	50
Short answer	10	2	20
Grand Total			100

Practical / Clinical Examination Scheme

Total Time 2 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Time (minutes)
Major Practical	1	50	90
Minor Practical	1	20	30
Viva Voce	-	30	-
Total		100	120

Text Books:

- 1 Mohan, Harsh., Text Book of Pathology, 6th Edn., Delhi, Jaypee Brothers Medical Publishers, 2010.
- 2 Kumar, Vinay., *et al.*, Robbins and Cotran Pathologic Basis of Disease, 7th Edn., Noida, India, Elsevier India, 2008.
- 3 Panikar, Jayaram CK., Text Book of Medical Parasitology, 6th Edn., Delhi, Jaypee Brothers Medical Publishers, 2007.
- 4 Sanyal & Battacharya, Clinical Pathology, A Practical Manual, 2nd Edn., Noida, India, Elsevier India, 2011.
- 5 Mohan, Harsh., Clinical Pathology, 6th Edn., Delhi, Jaypee Brothers Medical Publishers, 2010.

SUBJECT: NOI ANUGAVITHI OZHUKKAM

(HYGIENE AND COMMUNITY MEDICINE INCLUDING NATIONAL HEALTH POLICIES AND STATISTICS)

Total Hours:100

The contents of this syllabus are to be imparted to students by lectures, demonstrations and field studies wherever possible. The importance of preventive medicine and the measures for the promotion of preventive health shall be emphasized. The students shall be made well conversant with the national health programs in rural and urban areas, so that they can also be assigned responsibilities in the field of preventive and social medicine including family planning.

CHAPTER – 1

[1 hour]

Introduction to preventive and social medicine, concept of man and society, aim and scope of preventive and social medicine, relations between economic factors and environment in health and disease, The ways to lead a disease free life as said by siddhar Theraiyar.

CHAPTER – 2

[1 hour]

The five landscapes- description and occurrence of diseases

CHAPTER – 3

[1 hour]

Ancient town planning – modern town planning

CHAPTER – 4

[1 hour]

Industries – occupational diseases and its preventions – occupation hazards – occupation classifications

CHAPTER – 5

[1 hour]

Oor thooimai – waste management – Excreta disposal – modern sewage treatment and other methods of sewage disposals

CHAPTER -6

[1 hour]

Modern house and vaasthu, Specifications of Siddha Hospital according to Therayar Tailavarga Surukkam

CHAPTER – 7

[1 hour]

Disposal of human corpses, History and types, Electric crematorium and related regulations, Organ donation

CHAPTER – 8

[1 hour]

Seasons (Perumpozhuthu, Sirupozhuthu) – Principles to be followed in the above seasons and the specific food. Imporikal Kappu, Healthy sleep habits related to seasons, Uthrayanam, Thachayanam, Uttama, Mathima, Athama Kaala Ozhukam, Outbreaks of seasonal diseases like Dengue, Malaria, Chicken pox etc.

CHAPTER – 9

[1 hour]

Healthy Environment-causes and impact of climate change of health- preventive measures to combat climate change- Malé declaration and other international Conventions on Climate Change- “Day Zero”- Basics of Bio-climatology, Organic Farming, Ethical consumption and Conservation of natural resources

CHAPTER – 10

[1 hour]

- α) Water – uses – sources – pollution and its related diseases, Purification and distribution. Water treatment methods
- β) Rain water, Snow water – Collection methods and Application types
- χ) River Water – types and therapeutic uses
- δ) Waterfalls, Pond water and Well water – types and therapeutic uses
- ε) Nandu Kuzhineer, Naavalmaraneer, karunkalineer, Vaazhaineer, ila neer (tender coconut water) – types and therapeutic uses.
- φ) Neerakaram, Kaadineer, Kainthaariyaneer, Ulogapathirathil vaithaneer (Gold, Silver, Copper, Panchalogam, Iron)
- γ) Water testing methods, quality of potable and drinking water, rain water harvesting

CHAPTER – 11

[1 hour]

Neruppu (or) thee – Atmospheric temperature – Effects of heat stress – Effects of cold stress – Preventive measures of global warming – humidity, Fire safety, Mock drill and types of fire extinguishers

CHAPTER – 12

[1 hour]

Air pollution – Health aspects, Prevention and control, ventilation – Types, Lighting, Pugai – types Good and adverse reaction, Control of air pollution in hospitals like fumigation, preventive aspects of traditional fumigation methods (Agil, Santhanam, Devadaru, Sambirani, Karpuram etc.)

CHAPTER – 13

[1 hour]

Noise –noise pollution – Effects and control

CHAPTER – 14**[1 hour]**

Good habits – Personal hygiene (oil bath etc.) – Dressing – gemstones and their medicinal effects. Pancha Karpam, Nalungu maa and Diseases, Bio Cleansing and Detoxification procedures in Siddha Medicine

CHAPTER – 15**[1 hour]**

Food – Six tastes – Three types of food – Toxicity – Adulteration – Food borne diseases – Prevention and control – Food standards- Food Digestion time

CHAPTER – 16**[1 hour]**

Drinks – Properties of hot water linked with utensils – fruit juices

CHAPTER – 17**[1 hour]**

Uses of beetle leaf and nut, over usage of areca nut, Tobacco control,

CHAPTER – 18**[1 hour]**

Rest and sleep – Types of bed – Sleeplessness

CHAPTER – 19**[1 hour]**

Nutritious and balanced diet – Role of fibers, cereals, vegetables – Greens – fruits – animal proteins – fish – birds – pickles etc. – Diseases – Thrithoda samaporulgal – Nutritional problems in public health

CHAPTER – 20**[1 hour]**

Principles of Diet regimen (Patthiyam), Daily diet regimen for Vali (Vatha), Azhal (Pitha) and Iyam (Kapham) body constitutions, Diet regimen (Patthiyam and Apatthiyam) for Oil bath, Purgation, Piles etc. Antidote for drug and diet (Patthiyam) adverse reactions, Food Serving procedures – types of vessels and their effect on food preparation.

CHAPTER – 21**[1 hour]**

- α) Communicable diseases: Causes – Symptoms – Prevention and control of Chicken pox – Measles – Mumps – Influenza – Diphtheria – Whooping cough – Tuberculosis – Plaque – Rubella, etc
- β) Intestinal infections: Causes, symptoms, prevention and control of poliomyelitis – Viral hepatitis – Cholera – Acute Gastro Enteritis – Typhoid – Food poisoning – Amoebiasis – Ascariasis – Hook worm infestation etc.
- γ) Arthropod borne infection: Causes, symptoms, prevention and control of Dengue – Malaria – Filariasis – Chikungunya-Lepto Spirosis, SARS.
- δ) Surface infection: Causes, symptoms, prevention and control of Trachoma – Tetanus - Leprosy – STD – AIDS/ HIV.
- ε) Traditional methods of Control and prevention of communicable diseases like Chicken pox, measles, Dengue, Chikungunya, Swineflu, Ebola etc

CHAPTER – 22**[1 hour]**

Primary Health Care, Maternity and Child Health Services, Immunization of children, Control of communicable diseases, Nutritional disorders, Health checkup of school children, National & Regional

health programmes – NMEP – NFCP – NLCP – NTP – National Aids control programme – National programme for control of blindness – Iodine deficiency disorders programme – National cancer control programme – National mental health programme – National diabetes control programme – Child survival and safe motherhood programme – National family welfare programme – National water supply and sanitation programme – Minimum needs programme – Health and missions, Health statistics, Drinking water quality, Environmental sanitation, Disaster management, Control of STD and Notifiable diseases-Role of Siddha Medicine in public health.

CHAPTER – 23

[1 hour]

Siddha Lifestyle Medicine

Definition of Life style diseases, Evidence based behavioral interventions to treat and manage chronic life style diseases, Health and Life style Medicine interventions, Life style counseling, Mental Health and adapting Thirumular Attanga Yogam.

CHAPTER – 24

[1 hour]

Siddha Primordial preventions of diseases- Definition and importance of primordial preventions- Levels of prevention – Primordial, primary, secondary and tertiary level, Siddha concept of prophylaxis – immunology and personnel hygiene -Vaccination & Immunization Schedule.

CHAPTER – 25

[1 hour]

Siddha Culinary Medicine

Introduction -Relation between diet and health life – Siddhars concept-Preventive care through culinary medicine-Siddha cutlery; Ancient and Modern perspective, do's and don'ts-Siddha diet for controlling specific diseases (e.g: Diabetes, Hypertension, Mother and Child Health)-Longevity through diet-High energy Siddha diet-Home gardening, Techniques for building a health soil-Siddha healthy cookery

CHAPTER – 26

[2 hour]

Principles of hospital management, Clinical Establishment act, Medical records Maintenance, Hospital Acquired Infection Control and Preventive methods, Bio Medical Waste Management – Types and Disposal management

Field Work

1. Visit to the nearby water purification plant of the local municipal authority.
2. Visit to the nearby co-operative organization to understand the preparation of Karuppatti, Vellam (Jaggery), Milk products, Honey, Tribal foods, Organic/traditional foods etc.
3. Hands on training on Control of Infectious diseases in Hospitals
4. Practical demonstration/training on Siddha culinary medicine:
 - a. Usage of Siddha Cutlery
 - b. Prevention and management of diseases through classical Siddha diet therapy
 - c. Preparation of Siddha kayakalpam

5. Health Statistics:

Medical statistics deals with applications of statistics to medicine and the health sciences, including epidemiology, public health, forensic medicine, and clinical research.

By identifying statistical trends and trails, health care providers can monitor local conditions and compare them to state, national, and international trends. Health statistics provide empirical data to assist in the allocation of public and private funds and help to determine how research efforts should be focused.

6. Special OPD for Social and Public health to deliver awareness (Drugless Therapies) and to Conduct a statistical research with the guidance of teaching/clinical faculty to assess the effectiveness of Siddha Primary / primordial prevention methods. Family counseling on primordial primary preventive methods also has to be done by the student in the supervision of faculty.

Theory Examination Scheme

Total Time 3 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Total marks
Long answer (Essay type)	2	15	30
Notes	10	5	50
Short answer	10	2	20
Grand Total			100

TEXT BOOKS:

1. Durai rasan, K. Noi illa neri, First edition, Chennai, Indhiya Maruthuvam Matrum Homeopathy Thurai, Tamilnadu Government, 2007.

REFERENCE BOOKS:

1. Patharthaguna Chinthamani, Mudhal Pathippu, Chennai, Indhiya Maruthuvam Matrum Homeopathy Thurai, Tamilnadu Government, 2007.
2. Ghosh, Birendra Nath., A Treatise on Hygiene and Public Health: With Special Reference to the Topics, 10th Edn., Calcutta, Scientific Publishing Company, 1953
3. Park, K., Park's Text Book of Preventive & Social Medicine, 25th Edn., Jabalpur, Banarasidas Bhanot Publishers, 2019
4. Achaya, K. T., Indian Food: A Historical Companion, Oxford University Press, 1998, ISBN:978-0195644166
5. Achaya, K. T., Everyday Indian Processed Foods, 5th Edn., New Delhi, National Book Trust, 2017, ISBN:978-8123710358
6. Egger, Garry., *et al.*, Lifestyle Medicine: Lifestyle, the Environment and Preventive Medicine in Health and Disease, 3rd Edn., Academic Press, 2017, ISBN:978-0128104019
7. Small, Ernest., Top 100 Food Plants: The World's Most Important Culinary Crops, NRC Research Press, 2009, ISBN:978-0660198583

8. Sud, R.K., Kumar, Sudhir., Herbs: Culinary, Medicinal, Aromatic Secrets and Human Happiness, Scientific Publishers, 2004, ISBN:978-8172333607
9. Uthamarayan K. S. Siddha Maruthuvaanga Surukkam, 3rd Pathippu, Chennai, Indhiya Maruthuvam Matrum Homeopathy Thurai, Tamilnadu Government, 2003.
10. Fugogo, Masanabu (Asiriyar) Kayalvizhi (Translated into Tamil) Iyarkai Vazhiyil Velanmai, Pollachi, Tamilnadu- Edhirveliyeeedu, 2017, ISBN: 978-9384646004.
11. Missra, Adhulya, Sambalilirundhu Pasumaikku; Oxygen Menifesto, Chennai, East publications, 2019, ISBN:978-9351350194
12. Nachal N., Rusiyin Rekhai, 15th Edition, Chennai, OM Publications 2016.
13. Nachal N.,Thamilar Nel,2nd edition, Chennai, OM publications, 2016.
14. Panchavarnam.R. Siruthaniyangalum Unavu Vagaikalum, 2nd edition Panrutti- Tamilnadu, Panchavarnam Publications, 2016, ISBN:978-9383924523
15. Bharathi, Pakthavalchala, Tamilar Unavu, Nagarkovil, Kalasuvadu pathippagam 2010, ISBN:978-9381969205
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**SUBJECT: SATTAM SAARNTHA MARUTHUVAMUM NANJU MARUTHUVAMUM
(FORENSIC MEDICINE AND TOXICOLOGY)**

Total Hours:150

Section 1. Sattam Saarntha Maruthuvam (Forensic Medicine) (97 Hours)

- 1) Introduction :** (3hours)
Definitions – unnatural deaths – inquest – courts – power of courts – proceedings of the courts -
Summons – medical evidences – dying declaration – witness –Sentences- professional secrets of
a doctor – doctors and proceedings of the courts- Medical Certificate.
- 2) Introduction to Medical Law and Ethics:** (3hours)
Duties of Medical Practitioners-Professional Secrecy-Professional misconduct-Professional
Negligency -Mercy killing-Organ Transplantation. (Detailed Study to be done as per Chapter 20)
- 3) Identity :** (10 hours)
Useful factors for identity- identity in civil and criminal cases - identity in dead person - racial
characters and religion– sex – sex determination from bones -age – medico legal importance of
age- age determination from teeth and bones – general development and stature -complexion
features of individuality – hair- external peculiarities-scars –Moles- malformation-Tattoomarks –
Anthropometry – Dactylography – poroscopy-occupational marks.
- 4) Medico legal Autopsy :**
Type of Autopsy- Conditions – Important points to be noted – External and Internal examination
– preparation of specimens for analysis – Issue of death certificate-exhumation.
- 5) Death and Its Causes :**
Definition -Medico legal importance – Modes of death and classification – sudden death – signs
of death- Suspended animation
- 6) Post-mortem Changes :**
Post Mortem Hypostasis-Algor mortis-Cadaveric changes in the muscle – primary relaxation –
rigidity – Secondary relaxation – Decomposition
Mummification – Estimation of time of death.
- 7) Asphyxia :** (10hours)
Definition-Asphyxia and Asphyxial death – causes – features of asphyxia and asphyxial death –
Autopsy findings common to all asphyxias – Hanging – Complete and Incomplete Hanging-causes
for death – autopsy findings – judicial hangings – medico legal aspects – Accidental-Suicidal-
Homicidal Hanging-strangulation – autopsy findings – medico legal aspects – differences
between hanging and strangulation – Throttling – autopsy findings – Drowning – causes
Autopsy findings – How to conform the cause of death — first aid – smothering –Suffocation-
medico legal aspects – choking – traumatic asphyxias – autopsy findings.

8. Wounds and classification :

(10 Hours)

Wounds –classification- abrasions – contusion – lacerated wounds – incised wound – stab wound – firearm wound and their medico legal importance – Ante mortem and post mortem wounds – Internal and external changes of wounds – Age of the wounds – death due to wounds – fatal injuries - Grievous injuries – Defense wound – varieties of firearm and its function. Causes for death due to firearm – Hemorrhage – fat embolism – Systemic embolism-Bomb Explosive Wounds-Transportation injury, types and mechanism of skull fractures-types of intra cranial hemorrhages.

9) Sexual offences:

(6 hours)

Classifications-Rape-Incest – procedure for examination of the accused and victim – Findings of the examination – Important point the accused & victim to be noted – Examination of the place where the offence takes place- blood stains – general examination–age and sex identification from blood stains-blood groups-dna –finger printing- chemical examination – Semenology – acid phosphatase test – alizarin test & etc. ; Serological examinations – Microscopic examination – Difference test between semen & other substances- **Unnatural sexual offences** :Sodomy- Examination of the accused and Victim- Bestiality – Examination of the accused and animal - Buccal Coitus – Tribadism – **Sexual Perversions**: Transveritism – Sadism – Masochism – Exhibitionism-Fetichism – Necrophilia-Froteurism- masturbation-undinism-lust murder.

10.Impotence and Sterility, Sterilization, Artificial Insemination:

(4 Hours)

Impotence and Sterility- Sterilization-Artificial Insemination-Surrogate Motherhood.

11.Virginity :

(2 Hours)

Anatomy of Female genitalia – Hymen – Causes for the Rupture of hymen – Medical legal importance.

12. Pregnancy :

(3 Hours)

Fertilization — Confirmatory findings for pregnancy – Presumptive signs – Probable signs – Positive signs – Biological Tests-Medico legal Importance-Legitimacy and Paternity.

13.Delivery :-

(3 Hours)

Signs of delivery the living – Signs of remote delivery in the living – Signs of delivery in the non living Woman– Supposititious child.

14.Abortion :-

(3 Hours)

Definition – Natural abortion –Cause of Abortion-Artificial Abortion- Justifiable abortion

– Abortion on the basis of health condition – Rules to be followed by the physician – Procedures – Criminal abortion – complications – Cause of death- MTP act, 1971- PCPNDT Act, 1994

15.Infanticide :-

(3 Hours)

Infanticide & its criminal proceedings – Still born babies – Features – Dead born – features – mummification – Causes of death – To confirm whether still born or birth after death – Accidental causes – Natural Causes – Criminal Causes – Precipitate Labor – Medico legal Importance – Concealment of Birth – Sudden Infant death syndrome – Battered baby syndrome.

16. Burns and Scalds :-

(3 Hours)

Burns – Scalds – Stages of Burns & scalds – signs & symptoms – causes of death – Autopsy findings.

17. Death from Lightning, Electricity, Hot & Cold :-

(4 Hours)

Lightning and its effects – Medication – Autopsy findings – Electricity and its effect – Causes for death – Medication – Autopsy findings – Hot – Effects – cold and its effects – Autopsy findings.

18. Starvation :-

(3 Hours)

Definitions – signs & Symptoms – Cause of death – Autopsy findings.

19. Forensic Psychiatry :-

(8 hours)

Insanity – Delirium – Delusion – Medico legal aspects – Hallucination – illusion – Lucid interval – impulse – obsession – Phobia – idiocy – Mental Sub-normality – Diagnose insanity – Imbecility – feeble mindedness – Dementia – Schizophrenia – Psychic epilepsy – melancholia – Psychiatry due to alcohol abuse – Feigned insanity – laws related to psychiatry – court and psychiatrics – somnambulism – Automatism – Hypnotism and mesmerism – Medico legal Importance – Civil and criminal responsibility of insane – restraint of insane.

20) Laws regulating Medical practice in India

Acts of Medico-Legal Importance in India

(3 hours)

Important provisions of Constitution of India – Important provisions of Indian Evidence Act – The National Medical Commission Act, 2019 – Indian Medicine Central Council Act, 1970 – Drugs and cosmetics Act 1940 – Drugs and magic remedies (objectionable) advertisements Act 1954 – Drugs control Act 1950

Important provisions of Indian Penal Code (IPC) and Code of Criminal Procedure (CrPC) (2 hours)

IPC Section 31 – A Will

IPC Section 39 – A person is said to cause an effect “voluntarily”

IPC Section 82 – Act of a child under 7 years of age.

IPC Section 83 – Act of a child above 7 years and under 12 years

IPC Section 84 – Mc Naughten’s Rule or legal test.

IPC Section 85 – Act under intoxication.

IPC Section 87 – Below 18 years – no valid consent for physical examination.

IPC Section 88-93 – Legal protection to Medical Doctors.

IPC Section 89 – Consent from Guardians for age below 12.

IPC Section 90 – Validity of Consent – fear, Intoxication etc.

IPC Section 118 – Concealing design to commit offence punishable with death or imprisonment for life.

IPC Section 176 – Omission to give notice or information to public servant by person legally bound to give it

IPC Section 177 – Furnishing false information.

IPC Section 178 – Refusing Oath or affirmation when duly required by public servant to make it.

IPC Section 179 – Refusing to answer public servant authorized to question.

IPC Section 182 – False information, with intent to cause public servant to use his lawful power to the injury of another person.

IPC Section 190 – Threat of injury to induce person to refrain from applying for protection to public servant

IPC Section 191 – Giving false evidence.

IPC Section 192 – Fabricating false evidence.

IPC Section 193 – Punishment for false evidence.

IPC Section 194 – Giving or fabricating false evidence with intent to procure conviction of capital offence.

IPC Section 195 – Giving or fabricating false evidence with intent to procure conviction of offence punishable with imprisonment for life or imprisonment

IPC Section 197 – Issuing or signing false certificate.

IPC Section 201 – Causing disappearance of evidence of offence, or giving false information to screen offender.

IPC Section 202 – Not informing Police

IPC Section 203 – Giving false information respecting an offence committed.

IPC Section 204 – Destruction of document or electronic record to prevent its production as evidence.

IPC Section 228A – Disclosure of identity of the victim of certain offences

IPC Section 272 – Adulterating Food or Drink

IPC Section 273 – Selling adulterated food or drink

IPC Section 274 – Adulteration of drugs

IPC Section 275 – Selling Adulterated drugs

IPC Section 276 – Selling a different drug

IPC Section 277 – Fouling Water / Spring / Reservoir

IPC Section 278 – Making Atmosphere noxious

IPC Section 284 – Punishment for negligent conduct with respect to poisonous substance

IPC Section 294 – Punishment for Exhibitionism

IPC Section 299 – Defines Culpable Homicide

IPC Section 300 – Culpable homicide is murder

IPC Section 302 – Punishment for murder

IPC Section 304 – Punishment for culpable homicide not amounting to murder

IPC Section 304A – Causing death by negligence

IPC Section 304B – Dowry death

IPC Section 306 – Abetment of Suicide

IPC Section 309 – Attempt to commit suicide

IPC Section 312-316: Criminal Abortions

IPC Section 313 – Causing miscarriage without woman's consent

IPC Section 317 – Abandoning Infant

IPC Section 318 – Concealment of birth by secret disposal of dead body.

IPC Section 319 – Hurt, Hurt means bodily pain, disease or infirmity caused to any person

IPC Section 320 – Grievous Injury Any of the following injuries are grievous. (Read more about this on Platinum access. This is an important topic)

IPC Section 323 – Punishment for Hurt

IPC Section 324 – Dangerous weapons / Poisons / Corrosives

IPC Section 325 – Describes Punishment for Voluntarily Causing Grievous Hurt.

IPC Section 351 – Defines Assault: Threat/attempt to apply force

IPC Section 354 – Punishment for Indecent Assault

IPC Section 361 – Kidnapping from lawful guardianship

IPC Section 362 – Abduction

IPC Section 363 – Punishment for kidnapping

IPC Section 366A – Kidnapping an Indian girl below 18 for Prostitution

IPC Section 366B – Importing any foreign girl below 21 for Prostitution

IPC Section 369 – Kidnap a child below 10 years for movable property

IPC Section 374 – Unlawful compulsory labour

IPC Section 375 – Rape, Unlawful sexual intercourse by a man

IPC Section 376 – Punishment for Rape

IPC Section 377 – Unnatural offences

IPC Section 497 – Adultery / Artificial Insemination

IPC Section 498A – Dowry death

Important provisos of Code of Criminal Procedure (CrPC) (1 hour)

CrPC Chapter 5 Section 41 to 51 – Arrest of Persons

CrPC Section 53. Examination of accused by medical practitioner at the request of police officer.

CrPC Section 54. Examination of arrested person by medical practitioner at the request of the arrested person.

CrPC Section 174. Police to enquire and report on suicide, etc.

CrPC Section 291. Deposition of medical witness.

CrPC Section 328. Procedure in case of accused being lunatic.

CrPC Section 329. Procedure in case of person of unsound mind tried before Court.

CrPC Section 338. Procedure where lunatic detained is declared fit to be released.

Basic Provisions of the following Laws related to Medical Practice

(2 hours)

1. Air (prevention and control of pollution) act 1981
2. Anatomy Act 1957
3. Arms Act 1950
4. Atomic energy regulatory body approval for radiology Act 1962
5. Atomic energy (safe disposal of radioactive waste) rules 1987
6. Biomedical waste management handling rules 1998
7. Birth and death and marriage registration act 1886
8. Blood bank regulations under Drugs and cosmetic rules 1999
9. Breeding of and Experiments on Animals Amendment Rules 2005
10. Consumer protection Act 1986
11. Dentists Act 1948
12. Disaster Management Act 2005

13. Electricity rules 1956
14. Environment protection Act 1986
15. Epidemic disease Act 1897
16. Eyes (Authority for Use for Therapeutic Purposes) Act 1982
17. Fire Prevention and Fire Safety Act 1986
18. Guardians and wards Act 1890
19. Homoeopathy Central Council Act 1973
20. Indian fatal accidents Act 1955
21. Indian lunacy Act 1912
22. Indian medical degrees Act
23. Indian nursing council Act 1947
24. Information Technology Act 2000
25. Insecticide Act 1968
26. Insurance Act 1938
27. Mental Health Act 1987
28. Narcotics and psychotropic substances Act 1985
29. Noise Pollution (Regulation and Control Amendment) Rules 2000,
30. Noise pollution control Rules 2000
31. Nursing council Act 1997
32. Persons With Disabilities Act 1995
33. Pharmacy Act 1948
34. Poisons Act 1919
35. Prevention of Cruelty to Animals Act, 1960
36. Prevention of food adulteration Act 1954
37. Prohibition of smoking in public places Rules 2008
38. Prohibition of Violence against Medicare Service Institutions Act 2009
39. Protection of Human Rights Act 1993
40. Public Liability Insurance Act 1991/1992/ 1993
41. Registration of birth and deaths act 1969
42. Rehabilitation Council of India Act 1992
43. Water (Prevention and Control of Pollution) Act 1974
44. The surrogacy (regulation) bill, 2018
45. Transplantation of human organ Act 1994
46. Vaccination Act 1880
47. Water (Prevention and control of pollution) Act 1974
48. The Food Safety and Standards Act, 2006

Important aspects of regulatory compliance for a medical practitioner

(2 hours)

State Boards/Councils acts for Medical Registration

State/central regulations on professional conduct and etiquette

Procedures for obtaining License for patented drug (State/central regulations)

Clinical Establishments (Registration and Regulation) Act, 2010

Consumer protection Act 1986

Laws regulating Emergency medical care given by AYUSH medical Practitioner

Rights and privileges of AYUSH medical Practitioner

Section 2. NANJU MARUTHUVAM (TOXICOLOGY)

(53 Hours)

1. Introduction

(3 hours)

Definition – History of poison-Law of Poisons- classification of poisons – Factors Modifying the Effect of Poison- Action of Poison-Biotransformation – Route of administration –Route of Excretion- diagnosis of poisoning in Living and dead – Duties of a doctor in case of poisoning – Treatment of poisoning-ideal homicidal and suicidal poisoning-Poison centres.

2. Corrosive poisons (Acids strong alkalis)

(3 hours)

Inorganic Acids: Sulphuric Acid-Nitric Acid-Hydrochloric Acid.

Organic Acids: Carbolic Acids-Oxalic acid.

Strong Alkalis: Sodium, Potassium, Ammonium Hydroxides and Carbonates

3. Irritant Poisons

I. **Agricultural poisons:** Organo Phosphorous- Organo Chlorine- Carbamates.

(2 hours)

II. **Inorganic Irritant Poisons:**

Metals: Arsenic Compounds-Antimony-Lead-copper-Mercury compounds-zinc

(3hours)

Non Metals: Phosphorous--Sulphur-Mica.

(2 hours)

Mechanical Irritants: Glass powder-diamond powder-animal and vegetable Hairs. (2 hours)

III. **Organic Irritant Poisons:**

(8 hours)

Plants: Abrus precatorius – Calotropis gigantea – Semecarpus anacardium – Capsicum annum – Croton tiglium – Ricinus communis – Euphorbia antiquorum – Excoecaria agallocha- Gloriosa Superba- Plumbago zeylanica (Parts used, Chemical Compounds, Signs and Symptoms, Fatal dose, Fatal Period, Siddha and Modern method of Treatment, Postmortem Examination and Medico legal Importance)

Animal Bites and Stings:

(3 hours)

Types of Animal Poisons (Chemical Compounds, Signs and Symptoms, Fatal dose, Fatal Period, Siddha and Modern method of Treatment, Postmortem Examination and Medico legal Importance) Ants- Scorpion-Wasps-Spider-Snakes-Centepedes-Bees-Rats-Onan-Lizards-Leech-Frog-Dog-Cat-Monkey- Horse-Fox-Unknown bite-Crocodile-Beetle-Pig-Animal bites treated with palagarai pappam.

4. Systemic Poisons

I. **Neurotic or Cerebral Poisons:**

Inebriant and CNS depressants: Opium-Morphine - Pethidine- Alcohol-Ethyl ,Methyl Alcohol-Toddy- Country Arrack.

(4 hours)

CNS Stimulants: Amphetamine.

(1hour)

Deliriant: Datura fastuosa- Cannabis sativa--Cocaine.

(2 hours)

Spinal Poison: Strychnos Nux Vomica- Peripheral nerve poison – Hemlock poison (1 hour)

II. Cardiac Poisons: -

(3hours)

Nerium odorum – Cerbera thevetia- Aconitum ferox – Nicotiana Tobaccum- Cleistanthus Collinus- Digitalis Purpurea. (Parts used, active principles, Signs and Symptoms, Fatal dose, Fatal Period, Siddha and Modern method of Treatment, Postmortem Examination and Medico legal Importance)

III. Asphyxiants:

(3hours)

Carbon Monoxide-Carbon Dioxide-Hydrogen Sulphide and War Gases.

5. Food Poisonings and Poisonous Foods

(8 Hours)

Definition-poisoning due to Micro organisms(Bacteria, Protozoa, fungus) - Botulism-poison due to chemical - Vegetable Origin (Lythrus Sativus, Rye, Oats, Barely, Ground nut, Argemone Mexicana, Mushrooms, Ulunthu, Thuvarai, kadali, motchai, Cocconut, Banana fruit, Jack fruit, Bombax Malbaricum, Naval kottai, Sivanar root, Nungu, Magilam poo, wheet, Gingily oil)-Fish Poisoning- Ghee-Honey-Curd rice-Rice- Egg- Kudineer Thodam- Idu Marunthu -Neer Thodam-Features of Poisonous food-Examination of Poisonous Food-Signs and Symptoms-Treatment. Food Adulteration and its medico-legal importance-Food Safety and Standards Authority of India (FSSAI)- Detection of Food adulteration- Dart: Detect Adulteration with rapid test – FSSAI.

6. Drug Dependence

(3 hours)

Definition-Causes-Types of Drug Dependence-Treatment Protocol-Investigations of drug abuse deaths.

7. House hold and Miscellaneous Poisons

(2hours)

Analgesics, Anti-pyretics, Kerosene, Camphor, Ant powder-Match Box-Rat Poison

Theory Examination Scheme

Total Time 3 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Total marks
Long answer (Essay type)	2	15	30
Notes	10	5	50
Short answer	10	2	20
Grand Total			100

Practical Classes :

Total Hours:100

Identification of Spotters

(10 hours)

Toxic Plants-Toxic Metals and Minerals-Toxic Animals and household poison.

Identification of Weapons:

(10 hours)

Ligature material, Blunt and Sharp edged weapons (Knife, Stone, Stick etc.), Fire arms

Microscope Findings:

(10 hours)

Stains (blood & Semen), Animal and Human Hair, Fibers etc.

Identification of cases by seeing Photos/videos :

(10 hours)

Injury Cases, Burning, Drowning, Hanging, Strangulation, Animal / insect Bites etc.

Certificates:

(10 hours)

Medical Certificate, Physical Fitness, Death certificate.

Practical usage of Instruments:

(4 hours)

Stomach wash tube and Ryles tube etc -

Examinations:

(16 hours)

Examination of skeletal remains, Age estimation from dentition, Age estimation from ossification, Accident register (wound certificate), Examination of drunkenness, Preservation of viscera in various poisoning.

Dart: Detect Adulteration with rapid test prescribed by FSSAI

(20 hours)

Visit to De-addiction centers for acquaintance of treatment protocols

(10 hours)

Visit to the causality OPD at District HQ hospital for acquaintance of treatment protocols for Snake bite / Suicide attempt /Poisoning cases

Visit to Nearby Hospital to attend Post-Mortem Examination classes (not less

than 2) Visit to the Nearby Civil and Criminal Court to understand the Court

proceedings

Practical Examination Scheme**Total Time 2 Hours****Total Marks: 100**

Topic	Units	Marks/Unit	Time (minutes)
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Spotters: Toxic Plants-Toxic Metals and Minerals-Toxic Animals and household poison, Ryles tube, stomach wash tube etc. (Candidate has to identify and write the name /type of the spotter)	5	2	10
Microscope Findings: Stains, Animal and Human Hairs, Semen, Blood, Fibers etc. (Candidate has to identify and write the name/type/ nature of the Microscope Findings)	5	2	10
Photos: Injury Cases, Burning, Drowning, Hanging, Strangulation (Candidate has to identify and write the name/type/nature of the case)	5	2	10
Weapons: Knife, Stone, Ligature material, Stick, Blunt and Sharp edged weapons, Fire arms (Candidate has to identify and write the name of the Microscope Findings)	5	2	10
Certificates: Medical Certificate, Physical Fitness, Wound Certificate, Age Certificate, Drunkenness, Death certificate. (candidate has to fill up the certificate)	1	5	15
Examinations: Bones, X rays, Dental, Age determination etc. (Candidate has to examine and write the inference of not less than 100 words)	1	5	15
Dart: Detect Adulteration with rapid test – FSSAI (Candidate has to perform the test and write the inference of not less than 100 words)	2	10	50
Viva Voce	-	30	-
Total		100	120

Text Books:

1. Murugesu Mudaliar, K.S., Nanju Murivu Nool, Third edition, Chennai, Department of Indian Medicine and Homeopathy, 1998.
2. Nandy, Apurba., Nandys's Hand Book of Forensic Medicine and Toxicology, Kolkata, New Central Book Agency, 2013;
3. Pillay, VV., Textbook of Forensic Medicine & Toxicology, 18th Edn., Paras Medical Publishers, 2017;
4. Iqbal P.A. Mohamed, Sattam Saarntha Maruthuvamum Nanju Maruthuvamum, Second edition, Chennai, Department of Indian Medicine and Homeopathy, 1999

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1. Reddy, K.S. Narayan, The Essentials of Forensic Medicine and Toxicology, 34th Edn., JAYPEE Brothers Medical Publishers, 2017
2. Kannan, Modi's Text Book of Medical Jurisprudence and Toxicology, 25th Edn., Lexis Nexis, 2015

3. Natkarni, K.M., Materia Medica vol-I and II, 3rd Edn., Bombay, K.M.Popular Prakashan, 1993
4. Ramachandran S.P., Visha vaidya aarooda noolgal,First edition,Chennai,Thamarai noolagam,2000
5. Vengattarajan.s, Sarabendirar vaidya muraigal (visha roga sigichai) Fifth edition, Thanjavoor, Saraswathi Mahal Noolagam,2005
6. Mudaliar, Sirumanavoor Munisamy, Vishavaidya Cinthamani Chennai, T.S. Balakrishna Nayagar,1995
7. Thiyagarajan .R ., Theraiyar yamaga venba,First edition,(first- third part), Chennai 1997
8. Thiyagarajan .R Gunapaadam Thathu Jeevam, Fourth edition, Chennai, Department of Indian Medicine and Homeopathy,1992
9. Whitaker, Romulus, Common Indian Snakes: A Field Guide, Macmillan, 2006, ISBN: 9781403929556
10. Whitaker, Romulus and Ashok Captain, Snakes of India: The Field Guide, Draco Books; 2016, ISBN: 978-9385724237
11. Pocock, R.I., "Arachnida." *The Fauna of British India, including Ceylon and Burma*, London, Secretary of State for India in Council, 1900
12. Tikader, B. K, and D. B Bastawade, "Scorpions - Scorpionida : Archnida." *The Fauna of India, Vol.3.*, Calcutta: Zoological Survey of India, 1983.*
13. Tikader, B. K, Handbook:Indian spiders, Calcutta: Zoological Survey of India, 1987.*
14. Dart: Detect Adulteration with rapid test, Food Safety and Standards Authority of India (FSSAI),
15. <https://fssai.gov.in/dart/> (Food Safety and Standards Authority of India)

*Available in public domain from <http://faunaofindia.nic.in/>



SUBJECT: RESEARCH METHODOLOGY AND MEDICAL STATISTICS

Total Hours:100

Learning objectives

To provide foundational knowledge on research methods. At the end of the course, the students will be understanding and conversant with the application of research methodology and medical statistics. The students are expected to be applying and analyzing the topics learnt through demonstration / training on (1) oral/poster presentation, (2) demonstration on literature search, (3) journal critique

Research methodology

Total Hours:60

	Hours
1 Introduction to research methods	
Objectives of research	1
Types of research	1
Clinical/pre-clinical research/qualitative research methods	1
Research process (Formulating research question; Statement of objectives; Framing research analysis and Data interpretation)	2
2 Literature search	
Systematic literature search in bio-medical databases (published and unpublished reports), including palm scripts	1
Search strategy (including use of Medical Subheading- MeSH, databases)	1
Demonstration on literature search on specific topic using PubMed (Class room training)	5
3 Epidemiological methods and its application in clinical research	
Measurements in epidemiology	2
Disease frequency	
Measures of association/impact	
Reliability and validity	4
Diagnostic validity	
Agreements	
Biases	
Introduction to Observational and Experimental studies	1
Descriptive studies	4
Case-report	
Case-series	
Cross-sectional study	
Ecological study	
Analytical studies	6
Case-control study	
Cohort study	
Clinical trials [Design issues (blinding; randomization; comparators); Types; Phases; Guidelines]	
Systematic review/Meta analysis	1
Evidence-based medicine/Levels of evidence	1
Data collection methods (data collection instrument/case report form; quality assurance;	2

Hospital information systems [A-HIMS; National AYUSH Morbidity and Standardized Terminologies methods of data collection]

Orientation to templates/guidelines for protocol and report writing 1

4 Research ethics/guidelines involving humans and animals

Principles of research ethics 1

Ethics review process (IEC/IAEC) 1

Orientation to research guidelines/regulatory bodies [CDSCO/DCGI/NABH/QCI/ICMR /GCP - AYUSH; Drug standardization as per Pharmacopoeial Laboratory for Indian Medicine (PLIM)] 1

National Pharmacovigilance programme - AYUSH (Importance; AYUSH; Identification and reporting ADR) 2

Intellectual Property Right (IPR)/Patent/TKDL 1

5 Introduction to research in Siddha system of medicine

Current status and scope for research in Siddha system 1

Siddha research concepts (e.g., *Alavaigal*) 2

Validity and reliability studies as relevant to Siddha system [e.g., Siddha classification of diseases; *Envagai thervu* and 96 *Thathuvangal*; *Yakkai ilakkanam*] 3

Literary research (including classical text) 1

6 Scientific communication

Writing protocols for various study designs 2

Writing scientific reports (Manuscripts based on case report/cases series) 2

Writing and citing references 1

Principles and practice of oral/Poster scientific presentation 3

Oral/Poster presentation on case report/case-series (demonstration & training) 5

Medical Statistics (Total Hours:40)

Hours

1 Introduction to biostatistics

5

Types of data

Probability

Parametric (Normal) and non-parametric distribution

Demography and vita statistics

2 Sources of data

2

Health programme/surveillance data

सर्वे भवन्तु सुखिनः

Hospital Information System(a- HIMS;Natural AYUSH Morbidity and Standard Technologies)
Electronic Portal (NAMASTE)]
Data from special surveys

3 Descriptive statistics	4
Measures of central tendency	
Measure of dispersion	
4 Inferential statistics (Tests of significance)	4
Comparing means (t test; ANOVA)	
Comparing proportions (Chi-square)	
Basics of multivariate analysis	
5 Presentation of data	2
Diagrammatic presentation (Charts/graphs)	
Tabular presentation	
Maps	
6 Sampling	2
Sampling distribution	
Types of sampling	
7 Sample size	3
Estimation; Testing hypothesis	
Type 1 and Type 2 errors; confidence intervals; precision	
Calculating sample size	
8 Data analysis and interpretation	3
Analysis plan	
Steps	
Use of statistical software	
Interpreting statistical analysis	
9 Journal critique (as journal club activities: Practical)	
1 Class room presentation on pre-clinical study	5
2 Class room presentations on case-report or case-series	5
3 Class room presentation on clinical research	5

Theory Examination Scheme*

Total Time 3 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Total marks
Long answer (Essay type)	2	15	30
Notes	10	5	50
Short answer	10	2	20
Grand Total			100

*Question Pattern for examination:

70% from Research methodology; 30% from Medical statistics;

Note: Scientific calculators shall not be used in the examination but ordinary calculator can be used.

Text books:

1. Rao PSSS, Richard J., Introduction to biostatistics and research methods, PHI Learning Pvt. Ltd.; 2012 Jan 9.

2. Health research methodology: A Guide for Training in Research Methods, Second Edn., World Health Organization, Manila; 2001. Available from
http://www.wpro.who.int/publications/docs/Health_research_edited.pdf

References/resource materials

1. National Ethical Guidelines for Biomedical and Health Research Involving Human Participants, Indian Council for Medical Research, New Delhi, 2017, ISBN: 978-81-910091-94. Available from https://www.icmr.nic.in/sites/default/files/guidelines/ICMR_Ethical_Guidelines_2017.pdf
2. Good clinical Practice for Clinical trials of Ayurveda, Siddha and Unani Medicine (GCP-ASU) Department of AYUSH, Ministry of Health & Family Welfare, Government of India, New Delhi, 2013, ISBN: 978-81-910195-8-2. Available from http://ayush.gov.in/sites/default/files/5110899178-Final%20Book%2028-03-13_0.pdf
3. Handbook for good clinical research practice (GCP): Guidance for implementation, World Health Organization, 2002. Available from https://www.who.int/medicines/areas/quality_safety/safety_efficacy/gcp1.pdf
4. Lohar DR., Protocol for testing of Ayurvedic, Siddha & Unani medicines, Government of India, Department of AYUSH, Ministry of Health & Family Welfare: Pharmacopoeial laboratory for Indian medicines, Ghaziabad., 2007;35.

SYLLABUS FOR FINAL PROFESSIONAL BSMS

SUBJECT: MARUTHUVAM (MEDICINE)

Total Hours:150

Study of following disease with clinical demonstration, their various names, Definition, causes, premonitory signs, signs & symptoms, description about the humoral disorders, pulse reading, complications, Associated disease, fatal signs, Line of treatment, prognosis, specific or special medicines, regimen and diet. Necessary modern scientific correlations shall also be incorporated as and when required.

- | | |
|---|------------|
| 1. Kural kammal (Hoarseness of voice) | (2 hours) |
| 2. Mookkadaippu (Sinusitis and Nasal block) | (2 hours) |
| 3. Irumal noi (Cough) | (2 hours) |
| 4. Eraippu noi (Bronchial asthma) | (2 hours) |
| 5. Elaippu noi (Tuberculosis) | (2 hours) |

6. Kuruthiazhal noi (Bleeding disorders and abnormalities of blood pressure)	(2 hours)
7. Thamaraga noi (pertaining with heart diseases)	(3 hours)
8. Veluppu noi (Anaemia)	(2 hours)
9. Oodhal noi (Dropsy)	(2 hours)
10. Ulaimanthai (Acute / chronic enteritis)	(2 hours)
11. Suvayinmai (Disorder of tastes)	(2 hours)
12. Seriyamai (Indigestion)	(2 hours)
13. Neervetkai (Polydipsia)	(2 hours)
14. Vikkal (Hiccup)	(2 hours)
15. Vanthi (Vomitting)	(2 hours)
16. Mantham (Dyspepsia)	(2 hours)
17. Gunmam (Pain abdomen)	(3 hours)
18. Manneeral noi (Diseases of spleen)	(2 hours)
19. Kalleeral noi (Diseases of liver)	(2 hours)
20. njal noi (Jaundice)	(2 hours)
21. Peruvayiru (Abdominal distension)	(4 hours)
22. Kudalpidippu (Abdominal colic)	(2 hours)
23. Perunkalichal noi (Diarrhoea)	(2 hours)
24. Ninakalichal noi (Amoebic dysentery)	(2 hours)
25. Kaduppu kalichal noi (Bacillary dysentery)	(2 hours)
26. Oozhi noi (Cholera)	(2 hours)
27. Soolai (Pricking pain of varied aetiology)	(5hours)

Siruneer noikal

28 (I) Neerinai arukkal noikal (Conditions of reduced urinary output)

- | | |
|--|------------|
| a) Kalladaippu noi (Renal calculi) | (3 hours) |
| b) Neeradaippu noi (Retension of urine) | (3hours) |
| c) Neerkattu (Anuria) | (3 hours) |
| d) Sottu neer (Incontinence of urine) | (3 hours) |
| e) Neersurukku (Oliguria) | (3 hours) |
| f) Vellai noi (Urethritis/ inflammation of the uro-genital organs) | (3 hours) |

28 (II) Neerinai perukkal noikal (Conditions of increased urinary output)

- | | |
|-----------------------------|------------|
| a) Athimoothiram (Polyuria) | (4 hours) |
|-----------------------------|------------|

b) Neerizhivu (Diabetes mellitus)	(3 hours)
c) Thelineer (Diabetes insipidus)	(2 hours)
d) Venneer (Spermatorrhoea)	(2 hours)
29. Keel Vayu (Arthritis)	(4 hours)
30. Suram – 64 (Fever – 64 types)	(7 hours)
31. Mukkutra noi (Delirium)	(3 hours)
32. Ammai noi (Viral infections)	(3 hours)
33. Vatha noi (Rheumatic diseases and other neurological disorders) & Pakkavatham (Hemiplegia)	(8 hours)
34. Pitha noi (Pitha diseases)	(5 hours)
35. Iya noi (Kapha diseases)	(5 hours)
36. Endocrine diseases	(8 hours)
(i) Hyper pituitarism	
(ii) Hypo pituitarism	
(iii) Hyper thyroidism	
(iv) Hypo thyroidism	
(v) Cushing's syndrome	
(vi) Adrenal insufficiency	
(vii) Hyper parathyroidism	
(viii) Hypo parathyroidism	
37. Infectious diseases	(5 hours)
38. Sexually transmitted diseases	(5 hours)
38.1 Korrukku noi (Syphilis)	
38.2 Mega vettai noi – (Gonorrohoea)	
39. Ema kurai noi/ Theivu noi – HIV & AIDS	(2 hours)
40. Life style disorders	(5 hours)

PRACTICALS:

(Total Hours:200)

1. Practical training in the general examination and systemic examination.
2. Maintaining clinical records
3. Envagai thervu
4. Nadi parisothanai
5. Application of Neerkuri and Neikuri
6. Application of Manikkadai nool
7. Application of Clinical investigations and interpretations
8. Practical training in common medical emergencies

9. Practical application of puramaruthuvam in medical cases

Theory Examination Scheme

Total Time 3 Hours			Total Marks: 100
Topic	Units	Marks/Unit	Total marks
Long answer (Essay type)	2	15	30
Notes	10	5	50
Short answer	10	2	20
Grand Total			100

Clinical Examination Scheme

Total Time 2 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Time (minutes)
Long case examination	1	50	90
Short case examination	1	20	30
Viva Voce	-	30	-
Total		100	120

TEXT BOOKS:

1. Kuppusamy Mudhaliyar K.N., Siddha Maruthuvam Podhu, Department of Indian Medicine and Homoeopathy, Chennai-106, Tamilnaadu Govt., 2012
2. Yugi Vaithiya Chindhamani, Department of Indian Medicine and Homoeopathy, Chennai-106, Tamilnaadu Govt., 2012.
3. M. Shanmugavelu, Noigalukku Siddha Parikaaram, Part 1&2, Department of Indian Medicine and Homoeopathy, Chennai-106, Tamilnaadu Govt., 2012.
4. Mehta, Nishar P., et al., editors., PJ Mehta's Practical Medicine ,21st Edition., The National Book Depot, 2018, ISBN : 978-8190704625.

REFERENCE BOOKS:

1. Pandithar Subramaniya Jeevarakshamirdham, 2nd Edition, 1928, Chennai
2. K.S.Uthamarayan, Siddha Maruthuvanga Churukkam, 3rd Edition, Department of Indian Medicine and Homoeopathy, Chennai-106, Tamilnaadu Govt., 2003.
3. Shanmugavelan.A. (Editor), Therayar Arulicheitha Siruneerkkuri Sodhanai, 3rd Edition, Thanjavur, Saraswathi Mahal Library, 2005.

4. Ramachandran. S.P., (Editor), Therayar Neerkkuri Vaithiyam, Chennai. Thamarai Noolagam, 2015.
5. Ralston, Stuart H., Davidson's Principle and Practice of Medicine, 23rd International Edn., Elsevier, 2018, ISBN:978-0702070273.
6. Glynn, Michael and William M. Drake, Editors, Hutchison's Clinical Methods, 24th International edition, Elsevier, 2017 ISBN: 978-0702067402.
7. R.C.Mohan., Pulippaani Vaithiyam (Moolamum uraiyum). 3rd Edition, Chennai, Thamarai Noolagam, 2016

* Available in Public Domain at <https://tamildigitallibrary.in>

SUBJECT: VARMAM, PURAMARUTHUVAM AND SIRAPPUMARUTHUVAM
(Varmam Therapy, External Therapy and Special Medicine)

Total Hours:150

1. KAYAKALPAM (Juvenilization Therapy)

(15 hours)

Definition – Description – Regimen – uses & etc of

- 1.1. Kalpa medicines (**Rejuvenation Therapy**) - Classification – General & special karpam.
- 1.2. Mooligai karpam – (Herbal origin)
- 1.3. Thathu Karpam (minerals origin)
- 1.4. Jeeva Karpam – (Animal origin)
- 1.5. Attanga yogam - Iyamam- Niyamam- Asanam- Pranayamam- Prathiyakaram - Thaaranaithiyanam-Samadhi
- 1.6. Pranayamam – Definition – Philosophy – method – Regimen – Uses
- 1.7. Yoga – Definition – Principles of yoga practice- yoga postures – types - explanation– philosophy – uses.
- 1.8. Muppu - Definition – philosophies – classification – description – uses.

2. VARMAM:

(10 hours)

- 2.1. Definition – Description about the importance of Varmam – why it is called as Unique feature of Siddha system : - Basic Philosophies related to the formation of Varma points – classification based on three humours – based on anatomical locations – based on signs & symptoms – special particular physical manipulation techniques & massage pertaining to Varma therapy – pulse diagnosis of varma patients – Important medicines used in varma therapy – Specific food items prescribed for the patients.
- 2.2. Detailed study about the following Varma points:- (it includes location – signs & symptoms – necessary manipulation techniques)

2.2.1. Paduvarmam (12)

(6 hours)

- | | |
|----------------------|-------------------------------|
| 1) Uchi varmam | 7) Urakka kaalam |
| 2) Pidari kaalam | 8) Thummi kaalam |
| 3) Chevikuthikaalam | 9) Ner Varmam |
| 4) Natchathirakaalam | 10) Adappa kaalam |
| 5) Thilartha kaalam | 11) Periya athisurikki kaalam |
| 6) Kannaadikaalam | 12) Kallidai kaalam |

2.2.2. Thodu varmam (96)

(34 hours)

I. Varma points located in Head & Neck :(22)

- 1) Pootellu Varmam
- 2) Mun chuvadi varmam
- 3) Nettri kaalam
- 4) Pin chuvadi varmam
- 5) Porichal varmam
- 6) Puruva kaalam
- 7) Kannakaalam
- 8) Kumbidum kaalam
- 9) Bala varmam
- 10) Chuliyadi Varmam
- 11) Moorthi kaalam

II. Varma Points located in Trunk : (37)

- 23) Malar varmam
- 25) Kulir varmam
- 27) Maattraan kaalam
- 29) Kaareeral varmam
- 31) Koombu varmam
- 33) Villu varmam
- 35) Urumi varmam
- 37) Kakotta kaalam
- 39) Changu thirikaalam
- 41) Manthira kaalam
- 43) Iruppu varmam
- 45) Andakkaalam
- 47) Thandu varmam
- 49) Pandri varmam
- 51) Mothira kaalam
- 53) Valamburi kaalam
- 55) Naabi varmam
- 57) Pushti kaalam
- 59) Kurunthukuthi kaalam.

III. Varma points located in the Extremities: (37)

- 60) Thuthikai varmam
- 62) Kavali varmam
- 64) Manikattu varmam
- 66) Muzhankai varmam
- 68) Kocchu varmam
- 70) Puja varmam
- 72) Aani varmam
- 74) Chulukku varmam
- 76) Aaama kaalam
- 78) Chirattai varmam
- 80) Channi varmam
- 82) Visha varmam
- 84) Kaal kannu varmam
- 86) Nadai varmam
- 88) Mudichu Varmam
- 90) Naduviral chulukku varmam
- 92) Peruviral mayya varmam
- 94) Konachanni
- 96) Paathachakkaram.

- 12) Aayama kaalam
- 13) Nadi kaalam
- 14) Chennai Varmam
- 15) Poigai kaalam
- 16) Kurunthukuthi kaalam
- 17) Alavattukona chenni Varmam
- 18) Vettu Varmam
- 19) Kokki kaalam.
- 20) Manthira kaalam
- 21) Kannu varmam
- 22) Arukukaalam.

- 24) Vilangu varmam
- 26) Arangu varmam
- 28) Thivalai varmam
- 30) Velleeral varmam
- 32) Nenchadaippan varmam
- 34) Mundellu varmam
- 36) Kuttri varmam
- 38) Chippi varmam
- 40) Vaayu kaalam
- 42) Chiriyathichuriki
- 44) Villu varmam
- 46) Kaccha varmam
- 48) Thandinadi varmam
- 50) Ada varmam
- 52) Vaanthi kaalam
- 54) Chorutheenda kaalam
- 56) Hanuman varmam
- 58) Chuli varmam

- 61) Dhakshana kaalam
- 63) Peruviral mayya varmam
- 65) Kannu varmam
- 67) Muttu varmam
- 69) Chulukku varmam`
- 71) Mozhi varmam
- 73) Pathakkala varmam
- 75) Kochu varmam
- 77) Thundu varmam
- 79) Muttu varmam
- 81) Naai thalai varmam
- 83) Uppu Kuttri varmam
- 85) Kuthikaal varmam
- 87) Kulachu varmam
- 89) Boomi kaalam
- 91) Kaal kavali
- 93) Adakka varmam
- 95) Komberi kaalam

2.3. Varma marunthugal (Varama therapeutics)

(10 hours)

3. GERIATRICS

(5 hours)

Definition – Description – Care and management physical & mental disorder – Care – External changes.

4. PSYCHIATRY:

(25 hours)

1) Classification of psychiatric disorders – Aetiological factors – Examination of mental state –

Manifestations of psychiatric illness – Delusions and hallucinations – symptoms of depression – Anxiety symptoms – Deliberate self harm and Suicidal ideation – Schizophrenia & Delusional disorders – Mood disorders – Neurotic, stress related and Somatoform disorders – Disorders of Adult personality and behaviour.

Introduction – Definition – Types – Treatment of the following diseases.

2) Paithiyam noi - 18 types

- | | | |
|------------------------|---------------------------|------------------------|
| 1. Aavesa Paithiyam | 2. Abikasa Paithiyam | 3. Mavuna Paithiyam |
| 4. Suronitha Paithiyam | 5. Vihaara Paithiyam | 6. Thaaga Paithiyam |
| 7. Azhal Paithiyam | 8. Murka Paithiyam | 9. Naduku Paithiyam |
| 10. Visha Paithiyam | 11. Pralaaba Paithiyam | 12. Pitha Paithiyam |
| 13. Aankaara Paithiyam | 14. Gnana Paithiyam | 15. Kaivisha Paithiyam |
| 16. Kama Paithiyam | 17. Visha Thaga Paithiyam | 18. Siddha Paithiyam |

3) a) Kirigai noi

b) Unmatham noi

c) Brammai noi

d) Matha noi

e) Mathathiyam noi

f) Soothika vatham

g) Moorchai – Apasmaram – mayakkam.

4) Seizure disorders

a) Valippu noi

b) Kakai Valippu noi

5. PURA MARUTHUVAM (External Therapy) 32 types

(15 hours)

Definition – Types – THOKKANAM – (Physical manipulation) Descriptions according to Therantharu – practical training – Steam therapy - Fume therapy- Bandages- Patru (Plaster) – Ottradam (Fomentation) – Poochu (paste) – Podi thimirdhal (powder massage)- Kalikkam- Anjanam (eye applications) – Nasika paranam (Medicated snuff)- Nasiyam (Nasal drops) – Murichal (Surgical correction of malunited fracture) – kombu kattal (splinting) – peechu (enema/douche) Oothal (blowing), Podi thimirthal-(Massage with herbal grains or paste)

6. BONE AND JOINT DISEASES:

(25 hours)

6.1. **Injuries to bones** : Fracture – varieties – X-ray findings – complications – indications for surgical treatment – fracture of childhood – reduction procedures with splints – POP and modern techniques – practical training.

6.2. **Varmam therapeutics for Odivu/Murivu**

- 6.3. **Diseases of bones:**-Osteomyelitis – Tuberculosis – Rickets – Scurvy – Paget's disease – Osteochondritis –Acromegaly–Tumours of bones–(Benign and malignant)–Secondary tumours.
- 6.4. **Injury to Joints:** Dislocation of shoulder joint, Jaw etc.
- 6.5. **Diseases of Joints:** Acute suppurative, Gonococcal, syphilitic arthritis, chronic arthritis - T B gummatous, Periorthritis, Rheumatoid and osteo arthritis, Gout, auto immune arthritis, Ankylosing spondylitis, Rheumatic arthritis – X-ray findings.
- 6.6. Injuries to muscles and tendons
- 6.7. Deformities -Scoliosis, kyphosis, cubitus valgus, Dupuytren's contracture, Coxa vara, Genu valgum, flat foot.
- 6.8. Injury to vertebrae – complications
- 6.9. Skull fracture

7. DISEASES OF CENTRAL NERVOUS SYSTEM

(15 hours)

- 7.1 Hemiplegia
- 7.2 Parkinsonism
- 7.3 Poliomyelitis
- 7.4 Cranial nerve disorders
- 7.5 Paraplegia
- 7.6 Quadriplegia
- 7.7 Cerebellar ataxia
- 7.8 Myopathy
- 7.9 Motor neuron disease

8. Management of Neuro coccal diseases through Varma therapy

(10 hours)

- 8.1. Cervical spondylosis
- 8.2. Lumbar spondylosis
- 8.3. Erbs palsy
- 8.4. Foot drop
- 8.5. Cauda equina syndrome

9. PRACTICAL TRAINING IN THE ATTACHED HOSPITAL ON THE FOLLOWING

(200 hours)

1. Clinical examination of Neurological, Psychiatry and Orthopedics cases.
2. Practical training on Varma Therapy.
3. Practical training on Puramaruthuvam – (External therapy) Steam therapy - Fume therapy-Bandages- Patru (Plaster) – Ottradam (Fomentation) – Poochu (paste) – Podi thimirdhal (Massage with herbal grains or paste) - Kalikkam- Anjanam (eye applications) – Nasika paranam- Nasiyam (Nasal applications) – Murichal (Surgical correction of malunited fracture) – kombu kattal (splinting) – peeche (enema/douche)
4. Practical training on Therapeutic applications of Yoga.
5. Writing case records.

Theory Examination Scheme

Total Time 3 Hours			Total Marks: 100
Topic	Units	Marks/Unit	Total marks
Long answer (Essay type)	2	15	30
Notes	10	5	50

Short answer	10	2	20
Grand Total			100

Clinical Examination Scheme

Total Time 2 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Time (minutes)
Long case examination	1	50	90
Short case examination	1	20	30
Viva Voce	-	30	-
Total		100	120

TEXT BOOKS:

1. Thiyagarajan R., Siddha Maruthuvam Sirappu, Chennai, Department of Indian Medicine and Homoeopathy, Chennai-106, Government of Tamil Nadu, 1995
2. Subramaniyam P., et al., Varma soothiram (A Tamil text on martial arts), Chennai, Institute of Asian studies, 2007
3. Iyengar BKS., light on yoga, Harpercollins publishers, 2001, ISBN: 9780007107001
4. Siddhar kaya karpam - Central Council for Research in Ayurvedha & Siddha, New Delhi, 1985
5. External Therapies of Siddha Medicine, Dr. Thirunarayanan, Centre for Tradicine Medicine and Research, Chennai, 2010
6. Mohanraj T. (Pathippaasiriyar), " Paithiya Roga Nithanam" (Athiyaayam), Sanni, Vaisoori, Paithiyam, Kuttam Mattrum, Oozhi Noi Thoguthi, Kanyakumari, ATVSVS Siddha Medical College, 2009, ISBN: 9789380288079

REFERENCE BOOKS

1. Mohanraj T. (Pathippaasiriyar), Sanni, Vaisoori, Paithiyam, Kuttam Mattrum Oozhi Noi Thoguthi, Kanyakumari, ATVSVS Siddha Medical College, 2009, ISBN: 9789380288079
2. Rajaram, Kannan., Varma Maruthuvam, Kanyakumari, ATVSVS Siddha Medical College, 2008, ISBN: 978-8190868433
3. Rajaram, Kannan, Varma Maruthuvam (Sirappu), Kanyakumari, ATVSVS Siddha Medical College, 2008, ISBN: 978-8190868426
4. Yugi Vaithiya Sinthamani, Chennai, Department of Indian Medicine and Homoeopathy, Chennai-106, Government of Tamil Nadu, 2012
5. Mohanraj,T.(Pathippaasiriyar), Vaadha Noi Thoguthi, Kanyakumari, ATVSVS Siddha Medical College, 2009, ISBN: 9789380288079

6. Mohanraj T. (Pathippaasiriyar), Varma Odivumurivu Saari Soothiram, Kanyakumari, ATVSVS Siddha Medical College, 2009, ISBN: 9789380288062
7. Sathyananda Saraswati, Swami, Asana Paranayama Muthira Bandha, Yoga publication trust, bihar, 2008, ISBN : 9788186336144
8. Bhatia M.S., A Short Textbook of Psychiatry, CBS Publishers and distributors Pvt. Ltd., New Delhi, 2011, ISBN:9788123920450
9. Kumar Navneet, Text book of Neurology, PHI Learning Pvt. Ltd., New Delhi, 2011, ISBN:9788120342439
10. Davidsons Principle and Practice of Medicine, 22nd Edn., Churchill Livingstone, Elsevier, 2014, IISBN no- 9780702050473
11. Natarajan, Mayilvahanan, Text Book of Orthopedics and Traumatology, Wolter Kluwer India/ Lippincott Wiliam, 2011 ISBN: 9788184734430
12. Sathiyabaama, M., Mooligai Karpangal, Muthal Pathippu, Chennai, Ulaga Tamizhaarachi Niruvanam, 1996[#]

available in public domain at <https://tamildigitallibrary.in>

SUBJECT: ARUVAI, THOL MARUTHUVAM

(SURGERY INCLUDING DENTISTRY AND DERMATOLOGY)

Total Hours:150

1. ARUVAI MARUTHUVAM (GENERAL SURGERY)

(Total 60 hours)

- 1.1. Literary evidences for the antiquity of surgical practice in Siddha medicine (1 hour)
- 1.2. Classification on the practice of treatment. Divine method (Vinnavarurai) – Rational method (Manidarurai) – Surgical method (Asurar urai) – (Aruvai, Agni, Karam and 25 sub divisions). (1 hour)
- 1.3. Study on Aruvai (Surgical excision)- Keeral (Incision)- Kuruthi vungal (Blood letting)- Attai vidal(Leech therapy)- Salagai(Probing)- Varthi (Medicated wick)- Oodhal (Blowing)- Peechu - (enema/ douch) -Urinchal(Sucking)--Kattudhal(bandaging)- Chuttigai (cauterization)-Vedhu (Steam therapy)- Pugai (Fumication)- Karam (caustic applications) (2hours)
- 1.4. General principles of surgery – Pre and post operative care – its management. (1 hour)
- 1.5. Study of causes, clinical features, classification, diagnosis, treatment (medical & surgical) with scientific correlations – clinical examination and investigations for the following diseases.
 - 1.5.1. Veekam – (Inflammation) (2 hours)
 - 1.5.2. Punkal – (Ulcers) (2 hours)
 - 1.5.3. Kattigal- (Tumours) (2 hours)
 - 1.5.4. Silaippun- (Sinus ulcers & its treatment with karanoool) (2 hours)
 - 1.5.5. Moolanoikal- (Ano-rectal diseases) (2 hours)
 - 1.5.6. Arpaviranam –(koppulam – mugapparu – Thavalaichori – Akkul koppulam- Akkul katti – Akkul nilapoosani katti – Akkul erichal katti – Putru vanmegam-Aani – Naga chutru – Setrupun – Maru – Attathar kopulam – Varagu koppulam) (5 hours)
 - 1.5.7. Pavuthiram – Fistula-in-ano (2 hours)
 - 1.5.8. Mega kattikal – Diabetic skin lesions, STD (1 hour)
 - 1.5.9. Yanaikkal – Filariasis (1hour)

- 1.5.10. Kandamalai – Cervical adenitis (1 hour)
- 1.5.11. Nagil katti – Benign & malignant tumours of the breast (1 hour)
- 1.5.12. Vithai noi – Diseases of scrotum (1 hour)
- 1.5.13. Kiranthi noi – Chronic ulcers (1 hour)
- 1.5.14. Kalladaippu - Renal calculi (1 Hour)
- 1.5.15. Aankuri noigal – Diseases of the male genitalia. (1 hour)
- 1.6. Naakku noigal (Diseases of the tongue) – Ulnakku noigal (Diseases of the uvula). (2 hours)
- 1.7. Acute specific infections – Tetanus, Gas gangrene, Cellulitis, Septicaemia, Bactremia, Pyemia, Wounds. (2 hours)
- 1.8. Non- specific infectious diseases: Cellulitis, Carbuncle, Ulceration, gangrene. (2 hours)
- 1.9. Tumours and cysts – Benign and malignant tumours. (2 hours)
- 1.10. Fluid electrolyte and acid base balance – Parenteral fluid therapy – contra indications to I.V therapy – clinical guide to fluid requirement – Alternative route for parenteral fluid therapy – Proctolysis, Transnasal intragastric tube – Acidosis & Alkalosis. (5 hours)
- 1.11. Burns and Scalds – Haemorrhage – Types of Shock (2 hours)
- 1.12. Diseases of Vessels (5 hours)
 - 1.12.1. Diseases of arteries – Aneurysm, Embolism, Thrombosis
 - 1.12.2. Diseases of veins – Thrombosis of vein, Varicose vein, Venous ulcer, Thrombophlebitis
 - 1.12.3. Diseases of lymphatic vessels and lymph nodes – Lymphoedema, lymphadenitis, lymphadenoma (Hodgkin's disease)
- 1.13. Infections of Hand & Foot (1 hour)
- 1.14. Diseases of breast – Breast abscess, Fibroadenoma, ANDI, Carcinoma breast. (2 hours)
- 1.15. Diseases of Rectum, Anus, Fissure in ano etc. (2 hours)
- 1.16. Diseases of urinary bladder, Prostatic gland, retention of urine. (2 hours)
- 1.17. Diseases of urethra, Phymosis, Paraphymosis. (1 hour)
- 1.18. Diseases of testis & scrotum – Orchitis, Hydrocele, Haematocele, Varicocele, Herniae (2 hours)

2. KAN, KATHU, MOOKKU, THONDAI MARUTHUVAM

2.1. KAN MARUTHUVAM (Eye diseases & Management)

(20 hours)

- 2.1.1 Definition of normal healthy eye
- 2.1.2 Names of 96 eye diseases according to "Agasthiyar nayana vithi"
- 2.1.3 Prophylactic measures for healthy vision
- 2.1.4 Causes of eye diseases
- 2.1.5 Classification of eye diseases according to Agasthiyar and Nagamuni nayana vithi – Including their names, signs & symptoms, surgical treatment techniques and medicines
- 2.1.6 Surgical treatment for Pitha kasam
- 2.1.7 Suttigai or Ratchai treatment for Padalam
- 2.1.8 Surgical treatment for Karunagappadalam
- 2.1.9 Ratchai treatment for Ezhuchinoi
- 2.1.10 Surgical treatment for Mudamayir
- 2.1.11 Medicines commonly used for Eye diseases:
 - a. Padalathi mathirai
 - b. Kankasa mathirai
 - c. Matcha Rethinadhi mathirai
 - d. Ilaneer kuzhambu
 - e. Chandrodhaya mathirai
 - f. Narikelanjanam
 - g. Pazha kirambu pakkuva vennai
 - h. Kandu Parpam
 - i. Anda neer

- j. Kan thailam
- 0.1.12 Comparision with modern diagnosis
 - a. Suzhal vanderithal - Vitreous opacities
 - b. Naga padalam - Pterygium
 - c. Mayir puzhuvettu - Ulcerative blepharitis
 - d. Amaram - Ophthalmia neonatorum
 - e. Kuvalai vippuruthi - Dacryocystitis
 - f. Vellezhuthu - Presbyopia
 - g. Thurmamisa valarchi – Episcleritis
 - h. Mudamayir - Trichiasis

- 2.1.13 Cataract and its surgical treatment.
- 2.1.14 Conjunctivitis and its treatment.
- 2.1.15 Glaucoma and its treatment.
- 2.1.16 Presbyopia, Myopia, Astigmatism, Nystagmus.
- 2.1.17 The causes and prevention of blindness.
- 2.1.18 Hygiene of Eye.
- 2.1.19 Viral infections of Eye

2.2 KATHU MARUTHUVAM (Ear diseases & Management) (10 hours)

Study of the following ear diseases with internal and external medicines: Sevi vatha noi – sevi soolai noi – sevi sannai noi – sevi vippuruthi noi – Sevi yezhuchi, Sevi Karappan - sevikkuttam – seviparu – Sevipilavai

- 2.2.1 Diseases of the external ear.
- 2.2.2 Diseases of Middle Ear
- 2.2.3 Tinnitus
- 2.2.4 Deafness

2.3 MOOKKU MARUTHUVAM (Nasal diseases& Management) (5 hours)

- 2.3.1 Peenisam - Nasal and paranasal sinus diseases.
- 2.3.2 Epistaxis
- 2.3.3 Rhinitis, nasal polyp.
- 2.3.4 Head ache

2.4 THONDAI MARUTHUVAM (Throat Diseases & Management) (5 hours)

- 2.4.1 Infections of nasopharynx, Tonsils, Adenoids, Esophagus.
- 2.4.2 Acute and chronic laryngitis
- 2.4.3 Disorders of voice.

3. PAL MARUTHUVAM (DENTISTRY) (15 hours)

- 3.1 Pal noigal (Dental diseases) – Eeru noigal (Diseases of the gums) –Aids to Oral Hygiene.
- 3.2 Abnormalities of Structure – Hypoplasia of the deciduous and permanent dentition – classification of aetiological factors in hypoplasia – Flurosis – Prevention of flurosis.
- 3.3 Attrition, Abrasion and erosion of the Teeth.
- 3.4 Dental caries.
- 3.5 Inflammation, Necrosis and Gangrene of pulp.
- 3.6 Acute and chronic periapical abscess.
- 3.7 Resorption of the Teeth.
- 3.8 Cementum abnormalities associated with its formation.
- 3.9 Stains and discolouration of the Teeth.
- 3.10 Gingivitis – supra gingival and sub gingival calculus – Stomatitis.
- 3.11 Congenital abnormalities of salivary glands – congenital atresia of the ducts.

4. THOL MARUTHUVAM (Skin Diseases & Management)

(35 hours)

- 4.1 Classification of Kutta noigal according to “Yugi chinthamani”
- 4.2 Definition for common Dermatological terms Macule – Papule – Vesicles – Wheal –Pustule – Scales – Crust – Excoriations – Fissure –Ulcer - Scar – Alopecia Areata – Atrophy – Burrow – Comedone – Circinata – Erythema – Erythroderma – Erythemato – Squamous – Granuloma etc.
- 4.3 Aids to healthy skin
- 4.4 Karappaan - Dermatitis and Eczema.
- 4.5 Padarthamarai – Tinea infections - Pimples(Acnes)- Verkuru (Prickly heat)
- 4.6 Kanakkadi, Silvida thadippu- Urticaria
- 4.7 Puzhu vettu-Alopecia
- 4.8 Podugu-Dandruf, Palunni-Molluscum, Maru-Wart
- 4.9 Venpadai – Vitiligo and leucoderma
- 4.10 Kalanjaga Padai – Psoriasis
- 4.11 Sirangu- Scabies
- 4.12 Perunoi – Leprosy
- 4.13 Bacterial, Viral, Fungal infections of the skin
- 4.14 Drug eruption and Bullous eruptions.
- 4.15 Diseases of the hair and scalp – Nails – Sebaceous glands – Sweat glands.
- 4.16 Skin disorders due to metabolic, nutritional, vascular, atrophic, endocrinal dysfunction and poisons.

5. PRACTICAL TRAINING IN THE ATTACHED HOSPITAL ON THE FOLLOWING

(Total Hours:200)

- 5.1 Aruvai (Surgical excision)- Keeral (Incision)- Kuruthi vungal (Blood letting)- Attai vidal (Leech therapy)- Salagai(Probing)- Varthi (Medicated wick)- Oodhal (Blowing)- Peechu (Douch/enema)- Urinchal(Sucking)- Kattudhal (bandaging)- Chuttigai(cauterization)-Vedhu (Steam therapy)- Pugai (Fumigation)- Karam (caustic medicines)
- 5.3 Sterilization – Anti sepsis – Sepsis – Surgical Instruments
- 5.4 Dressing of Ulcers and wounds.
- 5.5 Hospital infection and preventions
- 5.6 I.V. fluids infusion and blood transfusion
- 5.7 Modern surgical instruments – Various Forceps – Retractors – Needle holders – Urinary Catheters - Proctoscope – nasogastric tube – Suture needles and Threads.
- 5.8 Suture materials – varieties of suture – practical training in suturing.
- 5.9 Preparation and application of Karanool.
- 5.10 A knowledge of anaesthesia of general & local.
- 5.11 Examination of surgical cases –Acute abdomen- wounds – tumours etc.
- 5.12 Examination of Eye – Ear – Nose – Throat – Skin etc.
- 5.13 Writing case sheets of surgical cases.
- 5.14 Practical training in reading, X-rays, Ultra sonogram, CT scan & MRI.
- 5.15 1st aid – to aid unconscious patients – CPR – bandages – snake bite – scorpion sting – burns – scalds – haemorrhages and etc.

Theory Examination Scheme

Total Time 3 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Total marks
Long answer (Essay type)	2	15	30
Notes	10	5	50
Short answer	10	2	20
Grand Total			100

Clinical Examination Scheme

Total Time 2 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Time (minutes)
Long case examination	1	50	90
Short case examination	1	20	30
Viva Voce	-	30	-
Total		100	120

TEXT BOOKS

1. Uthamarayan. C.S., Siddhar Aruvai Maruthuvam, 6 th ed., Chennai, Directorate of Indian Medicine and Homeopathy, Govt. of Tamil nadu, 2013
2. Thiagarajan.R., Siddha Maruthuvam Sirappu, Chennai, Directorate of Indian Medicine & Homeopathy, Govt. of Tamil nadu, 1995
3. Madhavan, V.R, Kann Maruthuvam, Chennai, International Institute of Tamil Studies, 1982[#].
4. Uthamarayan. C. S., Aruvai Maruthuvathil Noyaaliyai Parisodhikkum Muraimai, Chennai, Directorate of Indian Medicine and Homeopathy, Govt. of Tamil nadu, 1981

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1. Amirthalingam T.S., Viswanathan, V., Thiagarajan.R.(Editor), Agathiar - Nagamunivar Nayana Vidhi, 2nd ed., Chennai, Directorate of Indian Medicine and Homeopathy, Govt. of Tamil nadu, 1976
2. Agasthiar Rana Nool, 2nd ed.,Chennai, Directorate of Indian Medicine and Homeopathy, Govt. of Tamil nadu, 2007
3. Subramaniyapillai ,K., Udal Nool, Thirunelveli, Hilal press, 1934
4. Mohan, R. C.(Pathippasiriyar), Agathiyar Gunavakadam, Chennai, Thamarai Noolakam, 2015.
5. Muthaliyar, Kuppusami K. N., Siddha Vaidya Thirattu, Chennai, Directorate of Indian Medicine and Homeopathy, Govt. of Tamil nadu, 2009
6. Ramachandran. S. P.(Pathippasiriyar), Theraiyar Thylavarka Churakkam, Chennai, Thamarai Noolagam, 2012.

7. Yugi vaidhya chintamani, Chennai, Directorate of Indian Medicine & Homoeopathy, Govt. of Tamil Nadu, 2012
8. Williams, Norman. S., et al., Editors. Baily & love's Short practice of surgery, 27th ed., CRC Press, 2018, ISBN: 978-1138031647
9. Das, S., A Manual on Clinical surgery, 14th ed., Kolkata, S. Das's Publications, 2019, ISBN: 978-8190568104
10. Rao, VA., Text book of Diseases of Eye, 5th ed., All India Publishers & Distributors, 2015, ISBN : 9788180040481
11. Iqbal, Muhammed P. A., Kann Maruthuvam: Kalai kalanjiyam, Pavai Publications, 2007
12. Bhel, B.N., Practice of Dermatology, 10th ed., CBS Publishers & Distributors, 2017, ISBN: 978-8123912837
13. Das S., A concise text book of surgery, 10th ed., Kolkata, S. Das's Publications, 2018, ISBN: 978-8190568128

available in public domain at <https://tamildigitallibrary.in>

SUBJECT: SOOL, MAGALIR MARUTHUVAM

(Obstetrics and Gynaecology)

Total Hours:100

I. SOOL MARUTHUVAM (Obstetrics)

1. Koopagam (Anatomy and Physiology) : (3 hrs)
 - 1.1. Applied Anatomy of Pelvis – Types – Divisions - True & False Pelvis – pelvic floor – Perineum.
 - 1.2. External Genital organs – Internal Genital organs
 - 1.3. Breast – Physiology of ovulation and Menstruation.

2. Karu Urpathy : (4hrs)

(Development of Embryo) According to Siddha aspect – Early development of Embryo in Modern aspect – Fertilization – Morula – Blastocyst- Implantation – Trophoblast – Decidua – Chorion and chorionic villi – Amnion – Amniotic fluid - Development of inner cell mass – Umbilical cord transport – Placental development – Placental hormones and Functions - Maternal and fetal circulation.

3. Karpini Urupugalin Maruthalgal: (4hrs)

(Maternal changes due to Pregnancy) – Role of hormones in pregnancy Management of disorders and treatment

4. Sool Kanippu: (Diagnosis of Pregnancy): (4hrs)

First, Second & Third trimester – Subjective – Objective – confirmative signs – Assessment of duration of pregnancy – Calculation of Estimated Date of confinement – Pseudocyesis – Difference between Primi and multigravidae.

5. Karpini Tharkaapu (Antenatal care): (5hrs)

Abdominal and pelvic examination – Antenatal visits – Advice – Obstetric grips – Vaginal examination – Minor ailments in pregnancy - Siddha treatment and Yogasanas during pregnancy. Contraception – Siddha and modern concepts – Oral – Injectables – Implants - IUCDs. Etc – Management and treatment

6. Magavu: (Foetus) : (2hrs)

Attitude – lie – Presentation – Position – Sizes of embryo and Foetus during gestation diameters of fetal skull – term baby – Preterm baby. – Management and treatment

7. Irattai Magavu and Pan Sool: (Twins and Multiple pregnancy). (2hrs)

8. Magaperu Kukaranam: (Complications of Pregnancy): (9hrs)

Hyperemesis gravidarum – Hydatidiform mole – Oligohydramnios – Polyhydramnios - Anaemia – Abnormalities of placenta and cord – Hypertensive disorders of pregnancy – Gestational Hypertension - Pre eclampsia – Eclampsia – Gunava avathanagam (Stanza 324 of Yugi vaithiya chinthamani) – Preterm labour – Premature Rupture of Membrane (PROM) – Intra Uterine Growth Retardation (IUGR) – Rhesus isoimmunisation. – Management and treatment -Maternal infection – TORCH – Sexually Transmitted Diseases (STD) – Syphilis – HIV – Gonorrhoea – Chicken pox – Malaria – Diabetes – Heart disease – Liver disease – Tuberculosis – Urinary Tract infections. – Management and treatment

9. Karuchithaivu: (Abortion): (4hrs)

Types, Kandagava avathanagam (Stanza 323 of Yugi vaithiya chinthamani) – Differential diagnosis — Management and treatment – Ectopic Pregnancy – Tubal – abdominal – ovarian.

10. Magapperu Mun Uthirasalai: (Antepartum Hemorrhage): (3hrs)
Abruptio placenta – Placenta previa. – Management and treatment

11. Sukha Magaperu Nadai: (Stages of Normal Labour): (2hrs)

12. Sukha Magaperu Nigalchikal: (Mechanism of Normal Labour) (2hrs)

Descent – flexion – Internal rotation – Extension – restitution – external rotation.

13. Sukha Magaperu Kanippu: (Management of Normal Labour) (3hrs)

Diagnosis of Labour – Management of First Stage – Aseptic and Antiseptic precautions - Second stage of Labour – Delivery position- Episiotomy – Ligation of cord – Management of third stage.

14. Asatharana Magaperu: (Abnormal Labour): (6hrs)

Occipito posterior presentation – Face – brow – Breech – Transverse or oblique lie – Compound presentation –Cesarean procedures – Management

15. Sool Poopu Sugaranam: (Normal Puerperium): (3hrs)

Involution of uterus – other pelvic Structures - Lochia – Lactation – Physiology of Lactation – Advantages of breast feeding – care of puerperium – care of the newborn. – Management and treatment

16. Magaperu Pin Uthirasalai: (Postpartum hemorrhage):

(1hr)

Retained placenta. – Management and treatment

17. Sool Poopu Kukaranam: (Abnormalities of the Puerperium)

(3hrs)

Puerperal pyrexia – Puerperal sepsis – subinvolution – Predisposing causes – Organisms – venous complications in the puerperium – Deep vein Thrombosis – Thrombophlebitis – Cerebral venous Thrombosis – Mastitis and breast abscess – Postpartum pituitary Necrosis – Psychiatric disorders during puerperium. – Management and treatment

SOOL MARUTHUVATHIL SIDDHA MARUTHUVA KOTPADUGAL

S.NO	TOPICS	REFERENCE	POEM NO
1	Karpasayam amaipum nadi narampugalum	Agathiyar arivaiyar sinthamani	82,83
2	Karutharikum vidham	Agathiyar arivaiyar sinthamani	86
3	Karpathil unam undaaga karanam	Thirumoolar thirumanthiram	478 - 483
4	Karutharikum adaiyaalam	Agathiyar arivaiyar sinthamani	87
5	Karutharithalai ariyum soothanai	Agathiyar arivaiyar sinthamani	88
6	Karutharitha mangai nadi	Yugi vaithiya sinthamani	122
	- do -	Siddha maruthuva magaperru iyalum magalir maruthuvamum (Sivasanmugaraja)	Page no 14,15
	- do -	Karpakool maruthuvam	241
7	Aann kuzhalathai matrum penn kuzhlathai pirakum adaiyalam	Agathiyar arivaiyar sinthamani	92
8	Pinda urpathi	Pathinnen siddhar vaithiya sillarai kovaiyil ulla agathiya vaithiya sagaaram	14 - 18
9	Karu urrpathy vivaram	Agathiyar vallathi 600	79 - 84
10	Thoppul kodi vivaram	Agathiyar arivaiyar sinthamani	94
11	Karpini ozhukkam	Agathiyar arivaiyar sinthamani	95,96,102
12	Vaanthiku kashayam	Agathiyar arivaiyar sinthamani	103
13	Vanthiku vathumai adai	Agathiyar arivaiyar sinthamani	104
14	Mudhal matham thodangi 10 matham varai noiyum maruthum	Agathiyar arivaiyar sinthamani	106 - 114

S.NO	TOPICS	REFERENCE	POEM NO
15	Karuvalarkum neii	Agathiyar arivaiyar sinthamani	115
16	Karu azhithal – karu azhiyum kalam	Agathiyar arivaiyar sinthamani	98
17	Karu azhiyum adaiyalam	Agathiyar arivaiyar sinthamani	99
18	Guna avathanagam	Yugi vaithiya sinthamani	323

19	Karpathil suram undaaga karanam	Karpakol maruthuvam	183, 184
20	Karpathil surathirku maruthuvam	Aathmarakshamirtham	Page no 72
	- do -	Karpakool maruthuvam	185
21	Karpathil thuvaalai undaga karanam	Karpakol maruthuvam	Page no 72
	- do -	Aathmarakshamirtham	186,187
22	Karpathil thuvaalaiku maruthuvam	Karpakol maruthuvam	193
	- do -	Aathmarakshamirtham	Page no 72
23	Karpiniku malasalakattinal maruthuvam	Noi illa valvu (Sirumanavuur munusamy mudhaliar)	Page no 37
24	Azhi kumbam	Agathiyar arivaiyar sinthamani	209
25	Mari karpam	Agathiyar arivaiyar sinthamani	208
26	Adhi pindam	Agathiyar arivaiyar sinthamani	210 - 212
27	Sool magotharam	Agathiyar arivaiyar sinthamani	198
28	Sool magotharam maruthuvam	Agathiyar arivaiyar sinthamani	199,200
29	Soolutra kalathil erpadum neersuruku marunthu	Aathmarakshamirtham	Page no 72
	Soolutra kalathil erpadum neraadippu marunthu	Aathmarakshamirtham	Page no 73
30	Karpavathiku kaladaithal	Aathmarakshamirtham	Page no 73
31	Tharuna prasavam	Agathiyar arivaiyar sinthamani	214
32	Azhuku prasavam	Agathiyar arivaiyar sinthamani	215
33	Asathiya prasavam	Agathiyar arivaiyar sinthamani	216
34	Mooda karpam	Agathiyar arivaiyar sinthamani	218 -219
35	Kuzhanthai irantha vitham arithal	Agathiyar arivaiyar sinthamani	217
36	Naalpamaraathi poochu	Agathiyar arivaiyar sinthamani	220
37	Paachootri poochu	Agathiyar arivaiyar sinthamani	222

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S.NO	TOPICS	REFERENCE	POEM NO
38	Sitramutti kashayam	Agathiyar arivaiyar sinthamani	225
39	Sivanar vembu poochu	Agathiyar arivaiyar sinthamani	228
40	Karunchoorai kashayam	Agathiyar arivaiyar sinthamani	233
41	Naalpamaraathi kashayam	Agathiyar arivaiyar sinthamani	243
42	Uzhinzhai poochu	Agathiyar arivaiyar sinthamani	239
43	Poondu kanji	Agathiyar arivaiyar sinthamani	236
44	Maritha pindam velipada	Noi illa valvuu (Sirumanavuur munusamy mudhaliar)	Page no 23
45	Vayitril iranthe pillai velipada	Aathmarakshamirtham	Page no 73
46	Azhukku velipada nanju kodi vizha	Noi illa valvuu (Sirumanavuur munusamy mudhaliar)	Page no 34
47	Vediuppu chunnam	Agathiyar arivaiyar sinthamani	247
48	Veppilai kashayam	Agathiyar arivaiyar sinthamani	246
49	Thuthi kashayam	Agathiyar arivaiyar sinthamani	245
50	Nanju kodi vizha	Aathmarakshamirtham	Page no 74
Magappetrirkku pin undakum rokangal			
51	Nithamba soolai	Yugi vaithiya sinthamani	236
52	Kandaga avathanagam	Yugi vaithiya sinthamani	324
53	Prasavathiku piragu sutham seiya	Noi illa valvuu – Sirumanavuur munusamy mudhaliar	Page no 40
54	Karpakalam mudhal paalutum kalam varaiyilana sthrikalukkana paththiyam	Noi illa valvu – Sirumanavuur munusamy mudhaliar	Page no 42
55	Vayitrul pillai iranthe ? Iravamalullatha ?	Karpakol maruthuvam page no 71	116
56	Prasavathirku pin erpadum vayiru pazhuthal maruthuvam	Karpakol maruthuvam page no 71	123-124
57	Paal surathuluku maruthuvam	Noi illa valvu page no 37	128

1. MAGALIR MARUTHUVAM (Gynaecology)

1. History, Examination and diagnostic procedure of a Gynecological patient. (1hr)
2. Congenital malformation of female genital organs. (1hr)
Vaginal – Uterine – Fallopian tube – ovarian anomalies – other anomalies.
3. Muthal Poopu(Sukharanam & Kukaranam): (1hr)
Puberty – Normal and abnormal. – Management and treatment
4. Poopu: (2hrs)
Menstruation –Menstrual cycle-Hypothalamo-pituitary-Ovarian axis (H-P-O axis) – Premenstrual syndrome. – Management and treatment
5. Kadai Poopu: (1hr)
Menopause – organ changes – Menopausal symptoms – Management in siddha.
6. Neuroendocrinology in relation to Reproduction. (1hr)
7. Poopu Kolarugal: (Disorders of Menstruation). (2hrs)
Amennorrhoea – Menorrhagia – Metrorrhagia – Dysfunctional Uterine bleeding – Types – DD – – Management and treatment
8. Soothagavali: (Dysmenorrhoea): (1hr)
Siddha and modern concepts– Management and treatment
9. Karuppai Adithallal: (Displacement of Uterus). (1hr)
Genital prolapse – Retroversion – chronic inversion. – Management and treatment
10. Maladu: (4hrs)
Infertility in Siddha and modern aspects – Types, Treatment and Management
11. Yoni Rogangal: Diseases of the Vagina in Siddha aspect and treatment. (2hrs)
12. Koopaga Urupugallin azharchi: Infections of the pelvic organs. (4hrs)
Vellai -(Leucorrhoea) – Vulvitis – Bartholinitis – Vaginitis – Cervicitis – Endometritis – Salpingitis – Oophoritis – Parametritis – Genital Tuberculosis – Management and treatment
Sexually Transmitted Infections.
Gonorrhoea – Syphilis – AIDS – Hepatitis B & C – Bacterial vaginosis – Trichomonas Vaginitis – monilial vaginitis – Management and treatment
13. Siruneer vega Kolarugal: Urinary problems in Gynecology. (2hrs)
Urinary Tract Infections – Incontinence – Fistula – Vesico vaginal fistula and Recto vaginal fistula (VVF & RVF). – Management and treatment
14. Nan Maravai Kattigal-Karuppai: Benign lesions of the Uterus. (2hrs)
Fibroid – polyps. – Management and treatment
15. Nachu Maravai Kattigal- Karuppai: Malignant lesions of the Uterus. (6hrs)

Cancer of cervix, Uterus and Vagina. – Management and treatment

16. Nan Maravai Kattigal- Sinaippai- Benign lesions of the ovary. (2hrs)

Polycystic ovarian Disease (PCOD) – Siddha treatment. Follicular cyst – Endometrial cyst (Chocolate cyst) – Dermoid cyst. – Management and treatment

17. Nachu Maravai Kattigal – Sinaippai: (2hrs)

Malignant Ovarian Tumors. – Management and treatment

18. Nagil Sothanai: (3hrs)

Breast Examination – Fibroadenoma – Carcinoma. – Management and treatment

19. Miscellaneous: (1hr)

Post menopausal bleeding – Lowbackache – Dyspareunia – Pruritus Vulvae – Hirsutism. – Management and treatment - Hermaphroditism Turner syndrome, Klinefelter's syndrome- Virilism – Management (1hr)

PRACTICAL TRAINING IN THE ATTACHED HOSPITAL ON THE FOLLOWING (Total Hours:175)

1. Examination of Ante natal and Post natal Cases
2. Practical training on handling instruments like speculum, uterine sound, vulsalum etc.,
3. Vaginal smear
4. Clinical examination of Breast.
5. Writing of case records.
6. Training on Ultrasonogram, necessary investigations and interpretations.
7. Application of Puramauthuvam in OG conditions

SIDDHA MARUTHUVA, MAGALIR MARUTHUVAM

S.NO	TOPICS	REFERANCES	POEM NO
1	Mathar vithi – pothumathar - kudaamathar – mathar sambatha vithi – punar vithi	Noi illa vaazhvu-Sirumanavu munusamy mudhaliar	Page -22,23,24

2	Penn kuri noigal – yoni rogangal - kurikunagal -maruthuvam	Yugimuni soothaga nool -300	65-124
3	Aann kuri noigal -kurikunagal - maruthuvam	Yugimuni soothaga nool -300	3 -64
4	Perumpadu -vagaigal – maruthuvam	Yugi vaithiya sinthamani Agatheesar mega noi nithanam	719 - 724 313 - 318
5	Aann malattu rogangal – lakshanam	Agatheesar arivaiyar sinthamani	203
	Vinthu thadaipattal aoushatham	Agathiya mamuni aruliya vaithiya sillalai kovai	Page-2
	Thathu vithi	Noiilla valvu-Sirumanavu munusamy mudhaliar	Page: 92-96
6	Penn maladu – karpaakool -vagaigal - maruthuvam	Agathiyar karpakol – 26 (agthiya mamunivar ezhuthiya vaidhya sillalai kovai -karukuzhiyal undakum siruvyathiyum maruthuvamum	1 – 26
	Penn maladu – aathi maladu – kaaga maladu -kathali maladu	Agathiyar arivaiyar sinthamani	204 - 207
7	Karuppa kattigal ,ukkara soolai	Yugivaithiya sinthamani	233
	Karpa vippuruthi lakshanangal	Agathiyar 2000 -paagam -2	25,26
	Karpa kattikalukku marunthu	Agathiyar vaithiya sathagam	29
8	Mulai kattikalukku maruthuvam	Agathiyar vaithiya sathagam	28
	Mulai puttrukku ratshai	Pararasa sekaram -2 nd pagam	277

Theory Examination Scheme

Total Time 3 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Total marks
Long answer (Essay type)	2	15	30
Notes	10	5	50
Short answer	10	2	20
Grand Total			100

Clinical Examination Scheme

Total Time 2 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Time (minutes)
Long case examination	1	50	90
Short case examination	1	20	30
Viva Voce	-	30	-
Total		100	120

TEXT BOOKS FOR SOOL MARUTHUVAM (Obstetrics)

1. Venugopal P.M Sool Maruthuvam, 5th edition, Directorate of Indian Medicine and Homeopathy, Chennai, 2007
2. Konar, Hiralal., DC Dutta's Textbook of Obstetrics, 9th Edn., JAY PEE Bros. Medical Publishers Pvt. Ltd., 2017, ISBN: 978-9352702428
3. Gopalan, Sarala., *et al.*, (editors), Mudaliar and Menon's Clinical Obstetrics, 12th Edn., Hyderabad, Universities Press Pvt Ltd., 2015, ISBN: 978-8173719530

TEXT BOOKS FOR MAGALIR MARUTHUVAM (Gynaecology)

1. Venugopal P.M., Magalir Maruthuvam , 4TH edition , Directorate of Indian Medicine and Homeopathy, Chennai 2013
2. Konar, Hiralal., DC Dutta's Textbook of Gynaecology, 7th Edn. JAY PEE Bros. Medical Publishers Pvt. Ltd., ISBN: 9789385891595
3. Daftary, Shirish N. & V.G. Padubidri, (editors) Shaw's Text book of Gynecology, 16th Edn Reed Elsilver India Pvt. Ltd, 2015, ISBN: 9788131238721.

REFERENCE BOOKS FOR SOOL MARUTHUVAM (OBSTETRICS) AND MAGALIR MARUTHUVAM (GYNAECOLOGY)

1. R.C Mohan, Pathipasiriyar, Agathiyar Vaithiya Vallathi -600, Thamarai Noolagam, Chennai , April 2001
2. D.Mohanraj & P. Prema (Pathipasiriyargal), Agatheesar Mega Noi Nithanam and Yugi Munivar Soothaga nool - 300, Munjirai, Siddha maruthuva nool publishers 2019
3. Thirumoolar Thirumanthiram (10th thirumunai) Thirupananthai Sree Kasi Madathin Veliyeedu – 2014

4. Mohan raj, D P Prema, (Pathipasiriyar), Agathiyar Arivaiyar Sinthamani (Magalir Maruthuvam), Munjirai, Siddha Maruthuva nool Veliettaalar, 2019
5. Sivashanmugaraja S., Siddha Maruthuva Magapetru Iyalum Magalir Maruthuvamum- Yaalpanam -Ilangai, Siddha Maruthuva Valarchi Kazhagam 2012*
6. R.C.Mohan (Pathipasiriyar), Athma Rakhshamirutham Vaithiya Sarasangirakamkam , Thamarai Noolagam , 2000
7. Chidambarathanu Pillai, Karppakol Maruthuvam, Chennai, Siddha Medical Literature Research Centre 1991
8. Mudhaliyar, Sirumanavuor Munusamy, Piniyatra Valveyenum Noi illa Valvu , Chennai, Rathna Naikkar and Sons – 1998[#]
9. Ramachandran S. P., Pathipasiriyar, Pathinen Siddhargal Vaithiya Sillarai Kovai (1 st part), Chennai Thamarai Noolagam, 1996
10. Thiyagarajan R , (Pathipasiriyar), Yugimunivar Vaithiya Sinthamani (Perunool 800) 1st Pagam, Arulmigu Palani Thandayutha Paani SwamiThirukovil, Siddha Maruthuva Nool Veliyeedu kuzhu - 1996
11. Venkatrajan S (Pathipasiriyar), Agathiyar 2000, Thanjavur, Saraswathy Mahal Noolagam, 2014
12. Ramachandran S.P, (Pathipasiriyar), Agathiya Vaithiya Sathagam, Chennai, Thamarai Noolagam ,2000
13. Ponnaiya Pillai I., (Pathipasiriyar), Pararasa Sekaram; Garpa Rogha Nithanam, Yaazhpaanam, SriLanka. Siddha Ayurvedha Maruthuva Kalluri Meel Pathippu Kuzhulu, 1998
14. Mudhaliyar Kandasamy ,Uyir Kakkum Siddha Maruthuvam (Aathmarakshamirtham Yennum Vaithiya Sara Sangiragam yendra peyarilum, Aavi Alikkum Amutha Murai Surukam yendra peyarilum velivandha nool ,Thamarai Noolagam) - 2012
15. Pandithar Subramaniam, Jeeva Rakhshamirtham, 2 nd Edition, Chennai, 1928[#]
16. Prema S., Agathiya Vaithya Sindhamani 4000, Chennai, Thamarai Noolagam, 1996.
17. Pillai , Kannusamy - Sigicha rathna deepam ,Chennai, Rathina naikkar and sons , 2007.
18. Chidambarathanu pillai, Maathar Maruthuvam, Chennai. Siddha Medical Literature Research Centre, 1984.
19. WHO recommendations: Non-Clinical Interventions to Reduce Unnecessary Caesarean Sections WHO, 2018, ISBN: 978-9241550338
20. Pregnancy, Childbirth, Postpartum and Newborn Care, A Guide For Essential Practice 3rd Edn., WHO, 2015, ISBN: 9789241549356
21. WHO recommendations on Adolescent Health, World Health Organization, 2017, WHO Reference Number: WHO/MCA/17.10
22. Who recommendations on Maternal Health, World Health Organization, 2017, Who Reference Number: WHO/MCA/17.10

*available in public domain at <https://tamildigitallibrary.in>

*available in public domain at <http://noolaham.org>

**SUBJECT: KUZHANTHAI MARUTHUVAM
(PAEDIATRICS) Total Hours:100**

- | | |
|--|---------------|
| 1. Neo natal care, Infant care, Child care. (Sei, mazalalai, Siruvar Nalam) | (4hrs) |
| 2. Breast milk (Thai paal) | (3hrs) |

Composition, advantages and disadvantages to the children and mother. Siddha concepts and medication for enhancing the breast milk

- 3. Pachchilam Kuzhanthai (New born) (6 hours)**
Term baby-preterm baby-Low birth weight- - Intrauterine infections.-Respiratory disorders.-Icterus.- Neonatal seizures.-Rh incompatibility-ABO incompatibility - Undescended testis – Phimosis – Hydrocele - Ambiguous genitalia - APGAR score - Neonatal reflexes, First aid in Paediatrics- Traditional paediatric instruments. Sangu, Paaladai, Thooli, Thottil, NadaiVandi, Kuthirai, Unjal
- 4. Noi Thaduppu (Immunization) (3 hours)**
Immunization schedule. (IAP, WHO)-complication of immunisation-other schedules of immunization- Uraimaathirai. - CheiNei, Siddha concepts of Immunization.
- 5. Valarchi Nilaikal (Growth and development) (6 hours)**
Introduction-factors affecting growth and development.-periods of growth-assessment of physical growth-assessment of bone age.-eruption of teeth.- behavioural development.- developmental milestones.-developmental delay -Disorders of growth and development -short stature-failure to thrive - behavioural disorders-nail biting, thumb sucking, pica eating - breath holding spells.
- 6. Pathin Paruvam (Adolescent) (3 hours)**
Physiology.-Stages of sexual maturation.-Hormonal changes.-Health problems during adolescence.- Psychological problems.-Juvenile delinquency-management and line of treatment
- 7. Ootasaththu Kuraipaadu (Nutritional deficiency disorders) (4 hours)**
Protein energy malnutrition.-Vitamin and mineral deficiency diseases.-management and line of treatment, Paediatric Nutrition.
- 8. Paandu, Sobai, Kamalai. (4 hours)**
types, symptoms -management and line of treatment
- 9. Thottru Noikal (Infectious diseases) (8 hours)**
Agakarananoigal - Purakarananoigal.-Thodam.- MannanNithanam (Definition, types, General Medications), Diptheria.-Pertussis.-Tetanus.-Mumps.-Measles. -Chicken pox.-AIDS in children, Suram -types of suram described in siddha -Rheumatic fever.-bird flu-swine flu-dengue -Enteric fever- Malaria.-management and line of treatment
- 10. Irappai & Kudal Noikal(Gastro intestinal system.) (8 hours)**
Maantham.-Seriyaamai.-Vaanthi.-Vikkal.-Lactose intolerance.-Malabsorption syndrome.- kazhichal- Diarrhoea in children.-Dysentery -Rectal prolapse -Congenital pyloric stenosis.- Rehydration therapy- - dental caries -gingivitis -angular stomatitis -akkaram -management and line of treatment
- 11. Suvaasa Noikal(Respiratory system.) (8 hours)**
Kanam -Childhood Tuberculosis -Kasam -cold and cough -iraippirumal -Bronchial asthma– Kanai Noikal 64 (Definition,Types& Treatment)- Pneumonia -management and line of treatment
- 12. Thamaraga Noikal (Cardio vascular system.) (6 hours)**
Congenital cardiac diseases. -cyanotic and acynotic heart diseases -management and line of Treatment

- 13. Maththiya Narambu Mandala Noikal (Central nervous system) (8 hours)**
Baalavaatham and its types& Treatment -Valippu and it types. -Janni-Delirium. -Cerebral palsy. -Mental retardation. -Infantile hemiplegia. -Meningitis. -Encephalitis. -Speech disorders. -Hyperactivity disorders-ADHD, Autism. -Temper tantrum- Hydrocephalus -Management including rehabilitation and line of treatment
- 14. Janana Uruppu & Siruneeraga Paathai Noikal (Genito urinary system.) (4 hours)**
Neerkattu -Male and female congenital defects. -Enuresis. -Encopresis.-Acute Glomerulo Nephritis- Nephrotic Syndrome -management and line of treatment
- 15. Thasai Kolarukal (Musculo skeletal disorder) (2 hours)**
Muscular dystrophy. -Scoliosis. -Lordosis. -Kyphosis. -management and line of treatment
- 16. Marabanu Kolarukal (Genetic disorder) (2 hours)**
Down's syndrome & its management
- 17. Naalamilla Kolarukal (Endocrine disorder.) (3 hours)**
Cushing's syndrome. -Juvenile diabetes mellitus. - Cretinism -management and line of treatment
- 18. Kirumi (Helminthic infestations) (2 hours)**
Naakupoochi -Keeripoochi. -Masaraipuzhu.- Parasitic infestations -management and line of Treatment
- 19. Thol Noikal (Skin infections) (6 hours)**
Karappan. -Kiranthi -sivappunoikal(**Types & Treatment**) -Sori, sirangu - Scabies -atopic dermatitis - Napkin rashes - insect bites – Umbilical infections -management and line of treatment.
- 20. Sevi Mooku Thondai Noikal (ENT diseases) (2 hours)**
20.1 Sevinoigal - Seezhvadithal – Acute & Chronic Otitis media -management and line of treatment.
20.2 Mookunoigal - peenisam, Epistaxis, mookadaippu -Nasal polyp -management and line of Treatment
20.3 Thondainoigal-Lasunathapitham, men, van annampaathippu (laryngitis, pharyngitis) - management and line of treatment
20.4 foreign body in ENT-management and line of treatment
- 21. Kann Noikal (Eye diseases) (2 hours)**
Congenital cataract -Ophthalmianeonatorum -Amaram -Maalaikann. -Pulithakann. -management and line of treatment
- 22. Piravi Kuraipaadu (Birth defects) (2 hours)**
Cleft lip -Cleft palate.Talipes (clubfoot) -osteogenesisimperfecta -Imperforate Anus
- 23. Pothuvaana Noikal (General children diseases) (2 hours)**
Mala vaatham – Adithallal - Vithaivaatham.-Umbilical hernia-Naaimul -Kudaletram - Aasanavedippu– Maru
- 24. Varmam and puramaruthuvam including Siddha Paediatric orthopaedics (2 hours)**

PRACTICAL TRAINING IN THE ATTACHED HOSPITAL ON THE FOLLOWING**(Total Hours:175)**

1. Examination of Infantile and Neonatal cases.
2. Practical application on Immunization schedule
3. Training on General and Systemic Examinations of Pediatric cases
4. Writing of case records.
5. Training on Ultrasonogram, necessary investigations and interpretations.
6. Application of puramaruthuvam in paediatric ailments.

Theory Examination Scheme**Total Time 3 Hours****Total Marks: 100**

Topic	Units	Marks/Unit	Total marks
Long answer (Essay type)	2	15	30
Notes	10	5	50
Short answer	10	2	20
Grand Total			100

Clinical Examination Scheme**Total Time 2 Hours****Total Marks: 100**

Topic	Units	Marks/Unit	Time (minutes)
Long case examination	1	50	90
Short case examination	1	20	30
Viva Voce	-	30	-
Total		100	120

TEXT BOOKS

1. Murugesha Muthaliar, K. S. Ponkusironmani, Paathipaasiriyargal, Kuzhanthai Maruthuvam (Balavagatam) 4th Pathippu, Chennai. Directorate of Indian Medicine & Homeopathy, Tamilnadu Govt, 2007
2. Sundarajan, Pillaipinni Maruthuvam (Paagam 1 & 2), 1st Pathippu, Chennai, Directorate of Indian Medicine & Homeopathy, Tamilnadu Govt., 2014
3. Paul, Vinod K., and Arvind Bagga., editors. Ghai Essential Pediatrics, 9th Edn., New Delhi, CBS Publishers & Distributors, 2019, ISBN:978-9387964105
4. Singh, Meharban, Pediatric Clinical Methods, 5th Edn., New Delhi, CBS Publishers & Distributors, 2019, ISBN: 978-8123926476

REFERENCE BOOKS

1. Kupusamy Muthaliar K. N. Siddha Maruthuvam (Pothu), Chennai Directorate of Indian Medicine & Homeopathy, Tamilnadu Govt. 2012
2. Pregnancy, childbirth, postpartum and newborn care - A guide for essential practice, 3rd Edn., WHO, United Nations Population Fund & UNICEF, 2015
3. Managing complications in pregnancy and childbirth - A guide for midwives and doctors, WHO; United Nations Population Fund; UNICEF & World Bank, 2003, ISBN: 9241545879
4. Managing newborn problems -A guide for doctors, nurses and midwives, World Health Organization, Dept. of Reproductive Health and Research; United Nations Population Fund; UNICEF, ISBN: 9241546220
5. Standards for maternal and neonatal care - Group 1: General standards of care for healthy pregnancy and childbirth, World Health Organization, Department of Making Pregnancy Safer and Department of Reproductive Health and Research, 2007 (Web only version as a part of WHO Integrated Management of Pregnancy and Childbirth Care (IMPAC) Package)
6. Pandithai, Subhramaniya, Jeevarakshamirutham- 2nd Pathipu, Chennai, 1928[#]
7. Muthaliyar, Kanthasamy, Vuyirkakkum Siddha Maruthuvam (Athmaratchamirutham Ennum vaithiya saarasangiragam entra peyarilum aaviyallikkum amuthamurai churukkam entra peyarilum veli vantha nool.) Thamarai noolagam, 2012.
8. Guide to Child Care (Parenting the Indian way), R.K. Anand, Vakils Feffer and Simons Ltd., 2nd Edn. 2008, ISBN: 978-8184620085
9. Guidelines on optimal feeding of low birth-weight infants in low- and middle-income countries, World Health Organization, 2011, ISBN: 978-9241548366
10. WHO recommendations on newborn health, World Health Organization, 2017, WHO reference number: WHO/MCA/17.07
11. WHO recommendations on child health, World Health Organization, 2017, WHO reference number: WHO/MCA/17.08
12. WHO recommendations on adolescent health, World Health Organization, 2017, WHO reference number: WHO/MCA/17.10
13. Bhat, Swarna Rekha, editor. Achar's Textbook of Pediatrics, 4th Edn., Universities Press, 2009, ISBN: 978-8173716546
14. Pocket book of hospital care for children: Guidelines for the management of common childhood illnesses, 2nd Edn., World Health Organization, 2013, ISBN: 978-9241548373
15. Rajaram, Kannan, Varma Maruthuvam (Sirappu), Kanyakumari, ATSVS Siddha Medical College, 2008, ISBN:978-8190868426
16. Mohanaraj. T. Paathipaasiriyar- Mathalai Thoguthi – I Kanyakumari, ATSVS Siddha Medical College, 2008, ISBN: 978-9380288000
17. Mohanaraj. T. Paathipaasiriyar, Mathalai Thoguthi – II Kanyakumari, ATSVS Siddha Medical College, 2008, ISBN:978-9380288017
18. Mohanaraj. T. Paathipaasiriyar, Mathalai No thoguthi– III Kanyakumari, ATSVS Siddha Medical College, 2008, 2009, ISBN:978-9380288109
19. Mohanaraj. T. Paathipaasiriyar, Kumbamuni Balavagadam, Kanyakumari, ATSVS Siddha Medical College, 2009, ISBN:978-9380288116
20. Mohanaraj. T. Paathipaasiriyar, Bala aachiriyam & Bala vagada aasiriyam, Kanyakumari, ATSVS Siddha Medical College, 2009, ISBN:978-9380288123
21. Poonayapillai, Ezhaalai I. Pararasasekaram – Balaroganithanam, Muthal Pathippu, Chennai, Thamarai noolagam, 2003.
22. Siva Shanmugaraja S. Pillaipinni Maruthuvam Kainool, Yazhpaanam – Srilanka, Siddha Maruthuva Vallarchi Kalagam 2001*

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*available in public domain at <http://noolaham.org>

2.11 No: of hours per subject (lecture including -tutorial-seminar-group discussion)

As shown under the title “**2.6 SUBJECTS**”, Table 1

2.12 Practical training given in labs/supervision (No: of hours for each exercise/training)

As shown in subject wise detailed syllabus under title “**2.10 CONTENT OF EACH SUBJECT IN EACH YEAR**”

2.13 Records

Mandatory for the subjects, having practical and clinical classes

2.14 Dissertation: Guide/Co Guide/ Change of Guide

Not applicable for UG course

2.15 Speciality training if any

Special training will be given in identification of raw drugs, medicinal preparations, Siddha diagnostic methods, case presentations, record writing, drug dispensing, yoga, varma massage, traditional bone setting, Siddha external treatment methods etc.

2.16 Project work to be done if any

Not applicable for UG course

2.17 Any other requirements (CME,Paper publishing etc.)

Not applicable for UG course

2.18 Prescribed/recommended textbooks for each subject

As shown in subject wise detailed syllabus under title “**2.10 CONTENT OF EACH SUBJECT IN EACH YEAR**”

2.19 Reference books

As shown in subject wise detailed syllabus under title “**2.10 CONTENT OF EACH SUBJECT IN EACH YEAR**”

2.20 Journals

As shown in subject wise detailed syllabus under title “**2.10 CONTENT OF EACH SUBJECT IN EACH YEAR**”

2.21 Logbook

Maintenance of Logbook /work book by interns are mandatory

3 EXAMINATIONS

3.1 Eligibility to appear for exams

1. Securing minimum 35% of internal assessment marks are mandatory for gaining eligibility for appearing examinations only. This shall not be considered for awarding pass to the subject concerned.
 2. Minimum of 80% attendance separately in clinicals/practicals and theory is the criteria for appearing the university examination.
 3. Minimum of eighty per cent attendance (80%) in each subject separately in theory and practical shall be essential for a student appearing in the supplementary examination.
 - The failed student of first Professional shall be allowed to appear in second professional examination, but the student shall not be allowed to appear in third professional examination unless the student passes all the subjects of first professional examination and maximum four chances shall be given to pass first professional examination within a period of maximum three years.
 - The failed student of second professional who have passed all the subjects of first professional examination shall be allowed to appear in third professional examination.
 - Maximum four chances shall be given to pass second, third and final professional examination each within a period of maximum three years, provided the course shall be completed within 9 years excluding internship.
- The Candidate shall pass all subjects of the previous years before registering for final year examinations.

3.2 Schedule of Regular/Supplementary exams

1. The first professional session will ordinarily start as per the date prescribed by the University/Statutory Council and the first professional examination shall be at the end of one academic year of first professional session.
2. The second professional session shall start every year following completion of first professional examination and the second professional examination shall be ordinarily held and completed by the end of one academic year every year after completion of one year of second professional session.
3. The third professional session shall start every year following completion of second professional examination and the third professional examination shall be ordinarily held and completed by the end of one academic year every year after completion of one year of third professional session.
4. The final professional session shall be of one year and six months duration and shall start every year following completion of third professional examination and the final professional examination shall be ordinarily held by the end of after completion of one year and six months of final professional session
5. The supplementary examination shall be held within six months of regular examination and failed students shall be eligible to appear in its supplementary examination

3.3 Scheme of examination showing maximum marks and minimum marks

(1) (a) The first professional session shall ordinarily start in July or in the date prescribed by the university / statutory council and the first professional examination shall be at the end of one academic year of first professional session.

(b) The first professional examination shall be held in the following subjects, namely:-

(i) Siddha Maruthuva Adippadai Thathuvangalum Varalarum [History and Fundamental Principles of Siddha Medicine]

(ii) Tamil Language or Communicative English (wherever applicable)

(iii) Uyir Vedhiyiyal (Bio Chemistry)

(iv) Maruthuva Thavara Iyal (Medicinal Botany and Pharmacognosy) and

(v) Nunnuyiriyal (Micro Biology)

(c) The failed student of first Professional shall be allowed to appear in second Professional examination, but the student shall not be allowed to appear in third Professional examination unless the student passes all the subjects of first Professional examination and maximum four chances shall be given to pass first Professional examination within a period of maximum three years.

(2) (a) The second professional session shall start every year following completion of first professional examination and the second professional examination shall be ordinarily held and completed by the end of one academic year every year after completion of one year of second professional session.

(b) The second professional examination shall be held in the following subjects, namely:-

(i) Udal Koorugal (Anatomy) Paper I

(ii) Udal Koorugal (Anatomy) Paper II

(iii) Udal Thathuvam (Physiology) Paper I

(iv) Udal Thathuvam (Physiology) Paper II

(v) Gunapadam- Marunthiyal (Pharmacology) – Paper I – Mooligai (Materia Medica – Plant Kingdom)

(vi) Gunapadam- Marunthiyal (Pharmacology) –Paper II – Thathu & Jeevam (Materia Medica – Metals, Minerals & Animal Kingdom)

(vii) Gunapadam – Marunthakaviyal (Pharmaceuticals) – Paper I

(viii) Gunapadam – Marunthakaviyal (Pharmaceuticals) – Paper II

(c) The failed student of second Professional who have passed all the subjects of first professional examination shall be allowed to appear in third Professional examination, but the student shall not be allowed to appear in final professional examination unless the student passes all the subjects of second Professional examination and maximum four chances shall be given to pass second professional examination within a period of maximum three years.

(3) (a) The third professional session shall start every year following completion of second professional examination and the third professional examination shall be ordinarily held and completed by the end of one academic year every year after completion of one year of third professional session.

(b) The third professional examination shall be held in the following subjects, namely:-

(i) Noi Naadal -Paper I (Siddha Pathology)

(ii) Noi Naadal -Paper II (Principles of Modern Pathology)

(iii) Noi Anugavidhi Ozhukkam (Hygiene and Community Medicine including National Health Policies and Statistics)

(iv) Sattam Saarntha Maruthuvamum Nanju Maruthuvamum (Forensic Medicine and Toxicology) and

(v) Research Methodology and Medical Statistics.

(c) The failed student of third professional who have passed all the subjects of first and second professional examinations shall be allowed to appear in final professional examination and maximum four chances shall be given to pass third professional examination within a period of maximum three years.

(d) For the purpose of teaching of Research Methodology, Bio-statistician shall be required as part time to teach Research Methodology.

(4) (a) The final professional session shall be of one year and six months duration and shall start every year following completion of third professional examination and the final professional examination shall be ordinarily held and completed by the end of completion of one year and six months of final professional session.

(b) The final professional examination shall comprise of the following subjects, namely:-

(i) Maruthuvam (Medicine)

(ii) Varmam, Puramaruthuvam and Sirappumaruthuvam (Varmam Therapy, External Therapy and Special medicine)

(iii) Aruvai, Thol Maruthuvam (Surgery including Dentistry and Dermatology)

(iv) Sool, Magalir Maruthuvam (Obstetrics and Gynaecology) and

(v) Kuzhanthai Maruthuvam (Paediatrics)

(c) The student failed in any of the four professional examinations in four chances shall not be allowed to continue his or her studies:

Provided that, in case of serious personal illness of a student and in any unavoidable circumstances, the Vice-Chancellor of the concerned University may provide one more chance in anyone of four professional examinations.

(d) To become eligible for joining the compulsory internship programme, all four professional examinations shall be passed within a period of maximum nine years including all chances as mentioned above.

DISTRIBUTION OF MARKS FOR THEORY AND PRACTICAL (Table 2)

Name of the Subject	Details of marks					
	No of papers	Theory	Minimum Theory Mark (50%)	Practical/ Clinical (Including Viva Voce)	Minimum Practical Mark (50%)	Total
First Professional						
1. Siddha Maruthuva Adippadai Thathuvangalum Varalarum [History and Fundamental Principles of Siddha Medicine]	One	100	50	---	--	100
2. Tamil Language	One	100	50	---	---	100
3. Communicative English	One	100	50	---	---	100
4. UyirVedhiyiyal (Bio Chemistry)	One	100	50	100	50	200
5. MaruthuvaThavaralyal (Medicinal Botany and Pharmacognosy)	One	100	50	100	50	200
6. Nunnuyiriyal (Micro Biology)	One	100	50	100	50	200
Second Professional						
1. UdalKoorugal (Anatomy)	Two	200	100	100	50	300
2. UdalThathuvam (Physiology)	Two	200	100	100	50	300
3. Gunapadam – Marunthiyal (Pharmacology)	Two	200	100	100	50	300
4. Gunapadam – Marunthakaviyal (Pharmaceuticals)	Two	200	100	100	50	300
Third Professional						
1. NoiNaadal - Paper I	One	100	50	100	50	200

(Siddha Pathology)						
2. NoiNaadal - Paper II (Principles of Modern Pathology)	One	100	50	100	50	200
3.NoI AnugavidhiOzhukkam (Hygiene and Community Medicine including National Health Policies and Statistics).	One	100	50	--	---	100
4. SattamSaarntha MaruthuvamumNanju Maruthuvamum (Forensic Medicine and Toxicology)	One	100	50	100	50	200
5. Research Methodology and Medical Statistics	One	100	50	---	---	100
Final Professional						
1.Maruthuvam (Medicine)	One	100	50	100	50	200
2. Varmam, Puramaruthuvam and Sirappumaruthuvam (Varmam Therapy External Therapy and Special Medicine)	One	100	50	100	50	200
3. Aruvai, TholMaruthuvam (Surgery including Dentistry and Dermatology)	One	100	50	100	50	200
4. Sool, MagalirMaruthuvam (Obstetrics and Gynaecology)	One	100	50	100	50	200
5.Kuzhanthai Maruthuvam (Paediatrics)	One	100	50	100	50	200

SCHEME OF EXAMINATIONS

FIRST PROFESSIONAL B.S.M.S COURSE

Scheme of Examination and Distribution of Marks for First Professional
B.S.M.S. course

Sl No	Subject	Details of Maximum Marks			
		Number of papers	Theory	Practical or Clinical (including Viva Voce)	total
1.	Siddha Maruthuva Adippadai Thathuvangalum Varalarum (History and Fundamental Principles of Siddha Medicine)	One	100	-	100

2.	Tamil Language	One	100	-	100
3.	Uyir Vedhiyiyal (Bio-Chemistry)	One	100	100	200
4.	Maruthuva Thavara Iyal (Medicinal Botany and Pharmacognosy)	One	100	100	200
5.	Nunnuyiriyal (Micro Biology)	One	100	100	200

Marks qualifying for pass:

The minimum marks required for passing the examination shall be fifty percentages (50%) in Theory and fifty percentages (50%) in Practical or Clinical, wherever applicable in each subject.

A candidate obtaining 75 percentages marks in each subject shall be awarded distinction in the subject and 60 and above percentage in each subject shall be awarded as First class in the subject.

Promotion Criteria:

The failed student of first Professional shall be allowed to appear in second Professional examination, but the student shall not be allowed to appear in third Professional examination unless the student passes all the subjects of first Professional examination and maximum four chances shall be given to pass first Professional examination within a period of maximum three years.

SECOND PROFESSIONAL B.S.M.S COURSE

**Scheme of Examination and Distribution of Marks for
Second Professional B.S.M.S Course**

- a) **Duration:-** The Second Professional session shall start every year following completion of First Professional examination and the Second Professional examination shall be ordinarily held and completed by the end of one academic year every year after completion of one year of Second Professional session.
- b) **Subjects of study:-** The Second Professional examination shall be held in the following subjects, namely:-

- (i) Udal Koorugal (Anatomy) Paper I
- (ii) Udal Koorugal (Anatomy) Paper II
- (iii) Udal Thathuvam (Physiology) Paper I
- (iv) Udal Thathuvam (Physiology) Paper II
- (v) Gunapadam – Marunthiyal (Pharmacology) Paper I – Mooligai (Materia Medica – Plant Kingdom)
- (vi) Gunapadam – Marunthiyal (Pharmacology) Paper II – Thathu & Jeevam (Materia Medica – Metals, Minerals and Animal Kingdom)
- (vii) Gunapadam – Marunthakaviyal (Pharmaceuticals) Paper I
- (viii) Gunapadam – Marunthakaviyal (Pharmaceuticals) Paper II

Sl. No	Subject	Details of Maximum marks			
		Number of Papers	Theory	Practical including Viva Voce	Total
1	UdalKoorugal (Anatomy)	Two	200	100	300
2	UdalThathuvam (Physiology)	Two	200	100	300
3	Gunapadam – Marunthiyal (Pharmacology)	Two	200	100	300
4	Gunapadam – Marunthakaviyal (Pharmaceuticals)	Two	200	100	300

Marks qualifying for pass:-

The minimum marks required for passing the examination shall be fifty percentages (50%) in Theory and fifty percentages (50%) in Practical, wherever applicable in each subject.

A candidate obtaining 75 percentages marks in each subject shall be awarded Distinction in each subject and 60 percentages and above in each subject shall be awarded as First class in each subject.

Promotion criteria:-

The failed student of Second Professional who have passed all the subjects of First Professional examination shall be allowed to appear in Third Professional examination, but the student shall not be allowed to appear in Final Professional examination unless the student passes all the

subjects of Second Professional examination and maximum four chances shall be given to pass Second Professional examination within a period of maximum three years.

THIRD PROFESSIONAL BSMS COURSE

Scheme of Examination and Distribution of Marks for Third Professional BSMS Course

a)Duration:-The Third Professional session shall start every year following completion of Second Professional examination and the Third Professional examination shall be ordinarily held and completed by the end of one academic year every year after completion of one year of Third Professional session.

b)Subjects of study:- The Third Professional examination shall be held in the following subjects, namely:-

- i. Noi Naadal- Paper I (Siddha Physiology)
- ii. Noi Naadal –Paper II (Principles of Modern Pathology)
- iii. Noi Anugavidhi Ozhukkam (Hygiene and Community Medicine including National Health Policies and Statistics)
- iv. Sattam Saarntha Maruthuvamum Nanju Maruthuvamum (Forensic Medicine and Toxicology)
- v. Research Methodology and Medical Statistics

Sl. No	Subject	Details of Maximum marks			
		Number of Papers	Theory	Practical including Viva Voce	Total
1	Noi Naadal- Paper I (Siddha Physiology)	One	100	100	200
2	Noi Naadal –Paper II (Principles of Modern Pathology)	One	100	100	200
3	Noi Anugavidhi Ozhukkam (Hygiene and Community Medicine including National Health Policies and Statistics)	One	100	-----	100
4	Sattam Saarntha Maruthuvamum Nanju Maruthuvamum (Forensic Medicine and Toxicology)	One	100	100	200

5	Research Methodology and Medical Statistics	One	100	-----	100
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SUBJECT-NOI NAADAL PAPER – I
(SIDDHA PATHOLOGY)
Theory Examination Scheme

Total Time 3 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Total marks
Long answer (Essay type)	2	15	30
Notes	10	5	50
Short answer	10	2	20
Grand Total			100

Practical / Clinical Examination Scheme

Total Time 2 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Time (minutes)
Major Practical	1	50	90
Minor Practical	1	20	30
Viva Voce	-	30	-
Total		100	120

SUBJECT-NOI NAADAL PAPER – II
(PRINCIPLES OF MODERN PATHOLOGY)
Theory Examination Scheme

Total Time 3 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Total marks
Long answer (Essay type)	2	15	30
Notes	10	5	50
Short answer	10	2	20
Grand Total			100

Practical / Clinical Examination Scheme

Total Time 2 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Time (minutes)
Major Practical	1	50	90
Minor Practical	1	20	30

Viva Voce	-	30	-
Total		100	120

SUBJECT: NOI ANUGAVITHI OZHUKKAM
(HYGIENE AND COMMUNITY MEDICINE INCLUDING NATIONAL HEALTH POLICIES AND STATISTICS)

Theory Examination Scheme

Total Time 3 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Total marks
Long answer (Essay type)	2	15	30
Notes	10	5	50
Short answer	10	2	20
Grand Total			100

SUBJECT: SATTAM SARNTHA MARUTHUVAMUM NANJU MARUTHUVAMUM
(FORENSIC MEDICINE AND TOXICOLOGY)

Theory Examination Scheme

Total Time 3 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Total marks
Long answer (Essay type)	2	15	30
Notes	10	5	50
Short answer	10	2	20
Grand Total			100

Practical Examination Scheme

Total Time 2 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Time (minutes)
Spotters: Toxic Plants-Toxic Metals and Minerals-Toxic Animals and household poison, Ryles tube, stomach wash tube etc. (Candidate has to identify and write the name /type of the spotter)	5	2	10

Microscope Findings: Stains, Animal and Human Hairs, Semen, Blood, Fibers etc. (Candidate has to identify and write the name/type/ nature of the Microscope Findings)	5	2	10
Photos: Injury Cases, Burning, Drowning, Hanging, Strangulation (Candidate has to identify and write the name/type/nature of the case)	5	2	10
Weapons: Knife, Stone, Ligature material, Stick, Blunt and Sharp edged weapons, Fire arms (Candidate has to identify and write the name of the Microscope Findings)	5	2	10
Certificates: Medical Certificate, Physical Fitness, Wound Certificate, Age Certificate, Drunkenness, Death certificate. (candidate has to fill up the certificate)	1	5	15
Examinations: Bones, X rays, Dental, Age determination etc. (Candidate has to examine and write the inference of not less than 100 words)	1	5	15
Dart: Detect Adulteration with rapid test – FSSAI (Candidate has to perform the test and write the inference of not less than 100 words)	2	10	50
Viva Voce	-	30	-
Total		100	120

SUBJECT: RESEARCH METHODOLOGY AND MEDICAL STATISTICS

Theory Examination Scheme

Total Time 3 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Total marks
Long answer (Essay type)	2	15	30
Notes	10	5	50
Short answer	10	2	20
Grand Total			100

Marks qualifying for pass:

The minimum marks required for passing the examination shall be fifty percentages (50%) in Theory and fifty percentages (50%) in Practical or Clinical, wherever applicable in each subject.

A candidate obtaining 75 percentages marks in each subject shall be awarded distinction in the subject and 60 and above percentage in each subject shall be awarded as First class in the subject.

Promotion Criteria:

The failed student of third professional who have passed all the subjects of first and second professional examinations shall be allowed to appear in final professional examination and maximum four chances shall be given to pass third professional examination within a period of maximum three years.

FINAL PROFESSIONAL BSMS COURSE
Scheme of Examination and Distribution of Marks for Final Professional BSMS Course

a)Duration:- The final professional session shall be of one year and six months duration and shall start every year following completion of third professional examination and the final professional examination shall be ordinarily held and completed by the end of completion of one year and six months of final professional session.

b)Subjects of study:- The Final Professional examination shall be held in the following subjects, namely:-

- (i) Maruthuvam (Medicine)
- (ii) Varmam, Puramaruthuvam and Sirappumaruthuvam (Varmam Therapy, External Therapy and Special medicine)
- (iii) Aruvai, Thol Maruthuvam (Surgery including Dentistry and Dermatology)
- (iv) Sool, Magalir Maruthuvam (Obstetrics and Gynaecology) and
- (v) Kuzhanthai Maruthuvam (Paediatrics)

Sl. No	Subject	Details of Maximum marks			
		Number of Papers	Theory	Practical including Viva Voce	Total
1	Maruthuvam (Medicine)	One	100	100	200
2	Varmam, Puramaruthuvam and Sirappumaruthuvam (Varmam Therapy, External Therapy and Special medicine)	One	100	100	200

3	Aruvai, Thol Maruthuvam (Surgery including Dentistry and Dermatology)	One	100	100	200
4	Sool, Magalir Maruthuvam (Obstetrics and Gynaecology)	One	100	100	200
5	Kuzhanthai Maruthuvam (Paediatrics)	One	100	100	200

SUBJECT: MARUTHUVAM (MEDICINE)
Theory Examination Scheme

Total Time 3 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Total marks
Long answer (Essay type)	2	15	30
Notes	10	5	50
Short answer	10	2	20
Grand Total			100

Clinical Examination Scheme

Total Time 2 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Time (minutes)
Long case examination	1	50	90
Short case examination	1	20	30
Viva Voce	-	30	-
Total		100	120

सर्वे भवन्तु सुखिनः



**SUBJECT: VARMAM, PURAMARUTHUVAM AND SIRAPPUMARUTHUVAM
(VARMAM THERAPY, EXTERNAL THERAPY AND SPECIAL MEDICINE)**

Theory Examination Scheme

Total Time 3 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Total marks
Long answer (Essay type)	2	15	30
Notes	10	5	50
Short answer	10	2	20
Grand Total			100

Clinical Examination Scheme

Total Time 2 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Time (minutes)
Long case examination	1	50	90
Short case examination	1	20	30
Viva Voce	-	30	-
Total		100	120

**SUBJECT: ARUVAI, THOL MARUTHUVAM
(SURGERY INCLUDING DENTISTRY AND DERMATOLOGY)**

Theory Examination Scheme

Total Time 3 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Total marks
Long answer (Essay type)	2	15	30
Notes	10	5	50
Short answer	10	2	20
Grand Total			100

Clinical Examination Scheme

Total Time 2 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Time (minutes)
Long case examination	1	50	90
Short case examination	1	20	30

Viva Voce	-	30	-
Total		100	120

**SUBJECT: SOOL, MAGALIR MARUTHUVAM
(OBSTETRICS AND GYNAECOLOGY)
Theory Examination Scheme**

Total Time 3 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Total marks
Long answer (Essay type)	2	15	30
Notes	10	5	50
Short answer	10	2	20
Grand Total			100

Clinical Examination Scheme

Total Time 2 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Time (minutes)
Long case examination	1	50	90
Short case examination	1	20	30
Viva Voce	-	30	-
Total		100	120

**SUBJECT: KUZHANTHAI MARUTHUVAM
(PAEDIATRICS)**

Theory Examination Scheme

Total Time 3 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Total marks
Long answer (Essay type)	2	15	30
Notes	10	5	50
Short answer	10	2	20
Grand Total			100

Clinical Examination Scheme

Total Time 2 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Time (minutes)
Long case examination	1	50	90
Short case examination	1	20	30
Viva Voce	-	30	-
Total		100	120

Marks qualifying for pass:

The minimum marks required for passing the examination shall be fifty percentages (50%) in Theory and fifty percentages (50%) in Practical or Clinical, wherever applicable in each subject.

A candidate obtaining 75 percentages marks in each subject shall be awarded distinction in the subject and 60 and above percentage in each subject shall be awarded as First class in the subject.

Duration of Compulsory Rotatory Residential Internship (C.R.R.I) shall be one year and the student shall be eligible to join the C.R.R.I Programme after passing all the subjects in the Final Professional examinations as per the statutory council regulations.

The student failed in any of the four professional examinations in four chances shall not be allowed to continue his or her studies.

To become eligible for joining the compulsory internship programme, all four professional examinations shall be passed within a period of maximum nine years including all chances as mentioned in 3.3.

EXAMINATION DATES, DURATION OF EXAMINATIONS, VIVA and QUESTION PAPERS

The examination dates will be fixed by the University. The duration of Theory and Practical/ Clinical exams shall be three hours. Question paper pattern and Regulations for Viva-Voce shall be as per the norms of University.

3.4. Papers in each year

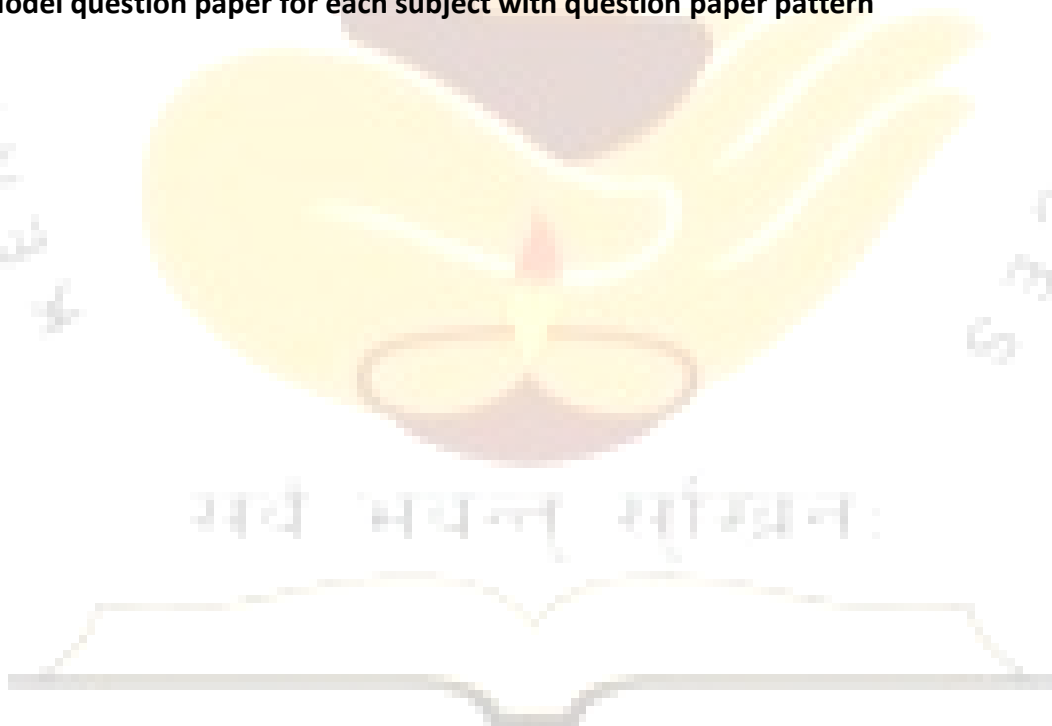
As shown under “3.3 SCHEME OF EXAMINATION SHOWING MAXIMUM AND MINIMUM MARKS”

3.5. Details of theory exams

For First and Second Professional: Details of theory examinations are as shown in table 2. Duration of each theory exam will be three hours; totally 22 questions in each subject, in which essay type questions – 2 nos ($2 \times 10 = 20$ marks), short notes- 10 nos ($10 \times 5 = 50$ marks) and answer briefly – 10 nos ($10 \times 3 = 30$ marks)

For Third and Final Professional: Details of theory examinations are as shown in table 2. Duration of each theory exam will be three hours; totally 22 questions in each subject, in which essay type questions – 2 nos ($2 \times 15 = 30$ marks), short notes- 10 nos ($10 \times 5 = 50$ marks) and answer briefly – 10 nos ($10 \times 2 = 20$ marks)

3.6 Model question paper for each subject with question paper pattern



**KERALA UNIVERSITY OF HEALTH SCIENCES
MODEL QUESTION PAPER**

**FIRST PROFESSIONAL B.S.M.S. DEGREE EXAMINATIONS(2016 Scheme)
Uyir Vedhiyal (Bio-Chemistry)**

Time : 3hrs
100

Max. Marks:

Answer all the questions.

I.Essays

2 x 10 = 20

1. Draw and explain electron transport chain.
2. Discuss the functions and disorders of Thyroid hormones.

II.Short notes

10 x 5 = 50

3. G.T.T.
4. Urea Cycle
5. Principle, technique and application of PCR.
6. Discuss absorption of lipids.
7. Discuss the metabolism of iron.
8. Discuss the functions of vitamin A.
9. Discuss tumour markers.
10. Discuss the marker enzymes in the diagnosis of myocardial infarction.
11. Discuss the classification of jaundice.
12. Discuss the mechanism of detoxification.

III. Answer briefly:

10 x 3 = 30

13. Gout.
14. Glycosylated Hemoglobin.
15. Name the factors regulating electrolyte balance.
16. Kwashiorkor.
17. Creatinine clearance test.
18. Types of RNA.
19. Name the laboratory tests for the diagnosis of AIDS.
20. Bioinformatics.
21. HDL is called good cholesterol. Justify the statement.
22. Multiple myeloma.

**KERALA UNIVERSITY OF HEALTH SCIENCES
MODEL QUESTION PAPER**

**FIRST PROFESSIONAL B.S.M.S. DEGREE EXAMINATIONS (2016 Scheme)
Maruthuva Thavara Iyal (Medicinal Botany and Pharmacognosy)**

Time : 3hrs

Max. Marks: 100

Answer all the questions.

Essays:**2 x 10 = 20**

1. Explain the family characters of Umbelliferae and furnish some important medicinal plants employed in Siddha formulations.
2. Define pharmacognosy and definition of different barks used in Siddha system.

Short Notes:**10 x 5 = 50**

3. Distinguished characters of Solanaceae.
4. Dicot leaf and monocot leaf.
5. Plant tissue culture.
6. Adulteration of herbal drugs.
7. Gymnosperms.
8. Dryopteris
9. Hard resins
10. Pigmentation studies of chlorophyll.
11. What are RET species and mention its conservation methods.
12. Quinoline alkaloid.

Answer briefly:**10 x 3 = 30**

13. Deliriant poison
14. Xanthophyll
15. 3 medicinal gums
16. Clove.
17. Pneumatophore.
18. Exarch and endarch xylem.
19. Gynostegium and gynostemium.
20. Pencillin.
21. Draw the floral diagram of Zingiberaceae.
22. Merits of Bentham and Hooker's classification.

KERALA UNIVERSITY OF HEALTH SCIENCES
MODEL QUESTION PAPER
FIRST PROFESSIONAL B.S.M.S. DEGREE
EXAMINATIONS(2016 Scheme)

Nunnuyiriyal (Micro Biology)

Time : 3hrs

Max. Marks: 100

Answer all the questions.

Essays:**2 x 10 = 20**

1. Describe the morphology, pathogenesis and lab diagnosis and prophylaxis of Rabies Virus.
2. Draw the structure of typical bacterial cells and explain.

Short notes:**10 x 5 = 50**

3. Cell involved in the immune system.
4. Opportunistic mycosis.
5. Vaccines.
6. Bacterial Growth curve.
7. Kirby Bauer Method.
8. Hypersensitivity
9. Tuberculin test.
10. Determinants of antigenicity.
11. ELISA.
12. Contribution of Louis Pasteur.

Answer briefly:**10 x 3 = 30**

13. Chemical agents of sterilization.
14. Flagella.
15. Differential media.
16. Nosocomial infection.
17. Mycotoxicosis.
18. SARS.
19. Bacteriophages.
20. PUO
21. VDRL test.
22. Psittacosis.

**KERALA UNIVERSITY OF HEALTH SCIENCES
MODEL QUESTION PAPER**

FIRST PROFESSIONAL B.S.M.S. DEGREE EXAMINATIONS(2016 Scheme)

Siddha Maruthuva Adippadai Thathuvangalum Varalarum (History and Fundamental Principles of Siddha Medicine)

Time : 3hrs

Max. Marks: 100

Answer all the questions.

Essays:**2 x 10 = 20**

1. Define Thathuvam. Explain Ninety Six Thathuvangal.
2. What are the basic properties of a Drug? Explain in detail with proper examples.

Short Notes:**10 x 5 = 50**

3. Iymbootha kolgai
4. Explain study of Cosmic Play.
5. Write the differences among Ayan, Ari and Aran.
6. Explain the quotations of Thirumoolar concepts about Uyir.
7. Siddharin manimahudam.
8. Classification of Azhal.
9. Differences between Pathi and Pasu.
10. Specialities of Siddhars .
11. Tamil sangam.
12. Kayakarpam

Answer Briefly:**10 x 3 = 30**

13. Kanmangal
14. Samsaari seevangal
15. Pulippani
16. Preservation of Palm leaf manuscripts.
17. Qualities of good physician.
18. Write any three poems from Thirikural – Marunthu Athikaram.
19. Marana Prayogam.
20. Propthi.
21. What is meant by Salvation? What are ways to attain Salvation?
22. Various forms of Sakthi.

MODEL QUESTION PAPER
FIRST PROFESSIONAL B.S.M.S. DEGREE EXAMINATIONS
TAMIL LANGUAGE (தமிழ் மொழி)

எல்லா வினாக்களுக்கும் விடை எழுதவேண்டும்

காலம் 3 மணி நேரம்

மதிப்பெண்-100

கட்டுரை வரைக:

(2 x 10 = 20)

1. பிரம்மமுனி, கோரக்கர் பற்றிய செய்திகளைத் தொகுத்து எழுதுக.
2. இயங்கும் பொருட்கள் மற்றும் இயங்காப் பொருட்கள் குறித்து கட்டுரை வரைக.

குறிப்பு வரைக:

(10 x 5 = 50)

3. திருமூலரைப் பற்றி எழுதுக.
4. கொன்றை வேந்தன் பாடலிலிருந்து முதல் ஐந்து அடிகளை எழுதுக.
5. அகத்தியரைப் பற்றி எழுதுக.
6. "ஐயப்பதம்- அறுசுவை தொடர்பு" பற்றி பாடலை எழுதுக.
7. "உடல் ஐயப்பதக் கூறுபாட்டையும் உடைய தெளல்" என்னும் பாடலைத் தருக.
8. சட்டமுனி சித்தர் பற்றி எழுதுக.
9. கடல் கோளுக்கு முன்பிருந்த குமரிநாடு பற்றி எழுதுக.
10. தேரையர் யார்?
11. பட்டுக்கோட்டை கல்யாண சுந்தரத்தின் பாடலின் சிறப்பு என்ன?
12. தமிழில் மொழி பெயர்க்க.

- a) $Rm^2 HxElm^2 1p.$ (I saw an elephant.)
- b) $Al^2 C^2 2x F^2 1-nL$ (He didn't see me yesterday.)
- c) $Rm^2 Cu^2 coElm^2 Flnq.$ (I will definitely pass in this Examination.)
- d) $Al^2 F^2 nDp^2 pln^2 1w^2 nm^2 n^2 p.$ (She had asked me a book.)
- e) $Al^2 1w^2 nm^2 nm^2 Elm^2 2d^2 1m^2 W^2 w.$ (When you feel illness consult a doctor)

சிறுகுறிப்பு வரைக:

(10 x 3 = 30)

13. 'படகு' -என்னும் பாடலை எழுதுக.
14. 'அவரைக்காய்' -இச்சொல்லில் வரும் எழுத்துக்களால் வேறு புதிய சொற்களை உருவாக்குங்கள்.
15. "தூணைச் சிறுதும் பாகத்....."என்னும் பாடலை எழுதுக.
16. பிறமொழிச் சொற்களை நீக்கி தமிழ்ச் சொற்களைப் பயன்படுத்தி எழுதுக.
 - a) மல்பூன் முகத்திற்கு ஒளி தரும்.
 - b) கொடியில் அழகான புஷ்பங்கள் பூத்துள்ளன.
17. ஆசிரியரும் மாணவரும் வெளியூரில் சந்திப்பது போல் ஒரு கற்பனை உரையாடல் எழுதுக.
18. புலி பாய்த்தது; ஆடு ஓடியது. (பன்மை வாக்கியமாக மாற்று.)
19. மாணவர்கள் பந்தாட்டத்தில் வெற்றி பெற்றார்கள்.(நிகழ் காலத்தில் மாற்று.)
20. யூகிமுனி என்ற சித்தரைப் பற்றி எழுதுக.
21. 'மருந்து' எனும் அதிகாரத்தில் வரும் ஏதேனும் மூன்று திருக்குறட்பாக்களை எழுதுக.
22. பதினான்கு வேகங்கள் எவை?

QP Code:.....

Reg No.....

KERALA UNIVERSITY OF HEALTH SCIENCES, THRISSUR
Second Professional B.S.M.S Degree Examinations (2016 Scheme)

UDAL KOORUGAL (ANATOMY) PAPER- I

UNIVERSITY MODEL QUESTION PAPER

Answer all the questions
Draw diagrams wherever necessary

Time: 3 Hrs

Max. Mark : 100

Essays:

(2x10=20)

1. Explain in detail about the Internal carotid artery.
2. Describe the features, muscle attachment & applied significance femur bone.

Short notes:

(10x5=50)

3. Explain cubital fossa.
4. Explain thoracic duct.
5. Explain around Knee joint.
6. Muscles of eye ball.
7. A typical cervical vertebra.
8. Inguinal lymph node.
9. Inferior venacava.
10. Scapula
11. Explain the muscle attachment in Tibia.
12. Comparison between male and female pelvis.

Answer Briefly:

(10x3=30)

13. Name the muscles of arm
14. Name the muscles of the Mastication
15. Name the tarsal bones
16. Muscles of facial expression.
17. Name the skull bones
18. What is patella
19. Mention the types of gluteal muscles
20. The borders and sides of the clavicle bone
21. Name six muscles in the forearm.
22. Explain the upper end of the humerus.

QP Code:.....

Reg No.....

KERALA UNIVERSITY OF HEALTH SCIENCES, THRISSUR
Second Professional B.S.M.S Degree Examinations (2016 Scheme)
UDAL KOORUGAL (ANATOMY) PAPER- II

UNIVERSITY MODEL QUESTION PAPER

Answer all the questions

Draw diagrams wherever necessary

Time : 3 Hrs

Max.Mark : 100

Essay :

(2x10=20)

1. Explain the location, parts, blood supply and nerve supply of the duodenum.
2. Explain the formation of brachial plexus and mention its branches.

Short notes :

(10x5=50)

3. Inner layer of Eye.
4. Midbrain.
5. Scrotum.
6. Trachea.
7. Cerebellum.
8. Thyroid gland.
9. kidney.
10. Optic nerve.
11. Right Lungs.
12. Lumbar Plexus.

Answer Briefly :

(10x3=30)

13. Contents of middle Ear.
14. Ligaments of Urinary Bladder.
15. Names of ventricles of the brain.
16. Ductus of deferens.
17. Left colic flexure.
18. Uterine tubes
19. Tongue.
20. Layers of the skin.
21. Corpus-collasum.
22. Weight and length of the spinal cord.

QP Code:.....

Reg No.....

KERALA UNIVERSITY OF HEALTH SCIENCES, THRISSUR
Second Professional B.S.M.S Degree Examinations (2016 Scheme)
UDAL THATHUVAM (PHYSIOLOGY) PAPER-I
UNIVERSITY MODEL QUESTION PAPER

Time : 3 hrs

Max. Marks : 100

I. Essay :

2 x 10 = 20

1. Details – Karu Urpathi?
2. Explain 14 Natural Urges ?

II. Short Notes :

10 x 5 = 50

3. Six Tastes and their Synergistic and Antagonistic taste ?
4. Dhasa Naadigal ?
5. Kanmendhiriyam ?
6. Saram and its Morden aspect ?
7. Sakthi Iyal ?
8. Annamaya Kosam ?
9. Pancha Pootha Panchakaranam ?
10. Guru Naadi ?
11. Thamogunam and its foods ?
12. Aatharangal ?

III. Answer Briefly :

10 x 3 = 30

13. Define Karuporul ?
14. Vabaneer ?
15. Pasam ?
16. Vamanam ?
17. Malam ?
18. Vyanan ?
19. Edanai ?
20. Alosakam ?
21. Predominant location of Pitham ?
22. Bootha Naadi?

QP Code:.....

Reg No.....

KERALA UNIVERSITY OF HEALTH SCIENCES, THRISSUR
Second Professional B.S.M.S Degree Examinations (2016 Scheme)
UDALTHATHUVAM (PHYSIOLOGY) PAPER-II
UNIVERSITY MODEL QUESTION PAPER

Time : 3 hrs

Max. Marks : 100

I. Essay :

2 x 10 = 20

1. Details - Hemorrhage ?
2. Transport of Respiratory Gases ?

II. Short Notes :

10 x 5 = 50

3. Adrenal Medulla - Details ?
4. Physiological Variations of Arterial Blood Pressure ?
5. Circulatory Shock ?
6. Venous Pulse ?
7. Fetal Circulation ?
8. Non Respiratory Functions of Respiratory Tract ?
9. Mechanism of Respiration ?
10. Acclimatization ?
11. Effects of Exercise on Respiration ?
12. Neuron - Details ?

III. Answer Briefly :

10 x 3 = 30

13. Cushing's Syndrome ?
14. Thymus gland ?
15. Local Hormones Any Five ?
16. Applied Physiology – Abnormal Pulse (Arterial Pulse) ?
17. Expired Air ?
18. Hypoxia ?
19. Pulmonary Edema ?
20. Refractory Period ?
21. Classifications of Nerve Fibers ?
22. Glaucoma ?

Q.P Code:.....

Reg NO:.....

KERALA UNIVERSITY OF HEALTH SCIENCES, THRISSUR
Second Professional B.S.M.S Degree Examinations (2016 Scheme)
GUNAPADAM- MARUNTHIYAL (PHARMACOLOGY) PAPER-I
MOOLIGAI (MATERIA MEDICA - PLANT KINGDOM)
UNIVERSITY MODEL QUESTION PAPER

TIME: 3 HRS

MAX.MRKS: 100

Answer all the questions:

I. ESSAY

(2×10=20)

1. Describe in detail about Keezhkaai Nelli.
2. Mention the medicinal plants having Kozhaigatri (Expectorant) action and explain any two of them.

II. SHORT NOTES

(10×5=50)

3. List any five plants used for the treatment of Kaamalai (Jaundice).
4. General properties (pothu gunam) of five parts of Aavarai (Cassia auriculata)?
5. Explain the special character of Kadukkai.
6. Purification of Cherangottai and its antidote.
7. Medicinal uses of Karisaalai.
8. Chukku- action, general property, Karppam.
9. Medicinal uses of Thanneervittan kizhangu.
10. Medicinal uses of Masikkai.
11. Name any five medicinal plants having Akatu vaivagatri (Carminative) action and explain any one of them.
12. Five medicinal uses of Vasambu.

IV. Answer Briefly

(10×3=30)

13. Purification of Nervaalam.
14. Name any five plants used as Emmenagogue.
15. Medicinal uses of Vengaayam.
16. Medicinal uses of Pirandai.
17. What is Karkadaka shingi ?
18. Medicinal uses of Vembu (Neem).
19. Name any five plants used as Diuretic.
20. Medicinal uses of Nilavembu.
21. Name three herbs used to treat Maantham.
22. Medicinal uses of Sivanar vembu .

KERALA UNIVERSITY OF HEALTH SCIENCES, THRISSUR
Second Professional B.S.M.S Degree Examinations (2016 Scheme)
GUNAPADAM- MARUNTHIYAL (PHARMACOLOGY) PAPER-II
THATHU & JEEVAM - (MATERIA MEDICA - METALS, MINERALS & ANIMAL KINGDOM)

UNIVERSITY MODEL QUESTION PAPER

Time: 3 hrs

Max.Marks: 100

Answer all the questions (draw diagrams wherever necessary)

I. ESSAY

(2×10=20)

- 1 Explain the synonyms, general properties, purification, specific action, dose, name of Lingam formulations, uses, toxic sign and symptoms and its antidote.
2. Explain the synonyms, general properties, purification, taste, action of Palagarai (cypreamoneta linn.,) and its uses in jeeva veri nanju (animal poison).

II. SHORT NOTES

(10×5=50)

3. Plants containing Lead and Copper.
4. Signs and symptoms of Veeram toxicity and its antidote.
5. Removal technique of thodam and sattai toxicity from Rasam.
6. Five therapeutic uses of Pooneeru (fullers earth).
7. General properties and medicinal uses of Indhirakoba poochi.
8. Chathuru and mithuru sarakkugal (synergistic and antagonist material) for Gold.
9. Any five medicinal uses of Navaatchaaram.
10. Routes of drug administration.
11. Tests to check the purity of Kasthoori.
12. Medicinal uses of Nandukkal.

III. Answer Briefly

(10×3=30)

13. Adverse drug reaction.
14. Medicinal uses of Pavazham (Coral)
15. Medicinal uses of Kavikkal (Red ochre)
16. Five medicinal uses of Pearl (Muthu)
17. How is Kaantham (Magnetic oxide of iron) superior to Ayam (Iron)?
18. Adulteration of Amber
19. Magimai (prabavam) of patharasam (mercury)
20. Action and properties of Kozhimuttai (domestic hen's egg)
21. Purification of Aamai odu (Tortoise shell)
22. Medicinal uses of Sangu (Conch shell)

Q.P.Code.....

Reg.No.....

KERALA UNIVERSITY OF HEALTH SCIENCES, THRISSUR
Second Professional B.S.M.S Degree Examinations (2016 Scheme)
GUNAPADAM- MARUNTHAKAVIYAL (PHARAMACEUTICALS) PAPER-I
UNIVERSITY MODEL QUESTION PAPER

Time: 3Hrs

Max.Mark:100

- **Answer all the questions**
- **Draw diagrams wherever necessary**

I.Essay:

(2x10=20)

1. Explain in detail about internal medicines with examples.
2. Write about the prescription writing with some medical abbreviations.

II.Shortnotes:

(10x5=50)

3. Chooranam and chooranathooimai
4. Kungiliyavennai
5. Oma theeneer
6. Swaasakudori maatthirai
7. Storage of medicines
8. Asaichooranam
9. Aadaathodai manappaagu
10. Thetraankotta ilakam
11. Matthan thylam
12. Aelaadhi chooranam

III.AnswerBriefly:

(10x3=30)

13. Ilaneer kuzhambu
14. Sombu theeneer
15. Mukkani
16. Vaazhaippoo vadagam
17. Aekamooligai prayogam
18. Nocchi kudineer
19. Thiripalaa chooranam
20. Maadhulai manappaagu
21. Thokkanam
22. Peru panchamoolam

Q.PCode.....

Reg.No.....

KERALA UNIVERSITY OF HEALTH SCIENCES, THRISSUR
Second Professional B.S.M.S Degree Examinations (2016 Scheme)
GUNAPADAM- MARUNTHAKAVIYAL (PHARAMACEUTICALS) PAPER-II
UNIVERSITY MODEL QUESTION PAPER

Time: 3Hrs

Max.Mark:100

- Answer all the questions
- Draw diagrams wherever necessary

I.Essay:

(2x10=20)

1. Write about the preparation of naaga parpam with its dosage, adjuvants, indications and puranadai(special treatment).
2. Describe about the parpam preparation of palagarai with its dosage, adjuvants, indications and its role on wounds and jeevaverinanju (intoxication due to infected animal bites).

II.Short notes:

(10x5=50)

3. Mayiliragaathichooranam
4. Saanthachandhrodhayamaatthirai
5. Ghandhagasudarthylam
6. Saathisambeera kuzhambu
7. Kaadikkaara chendhooram
8. Aamaiodu parpam
9. Patthiyam
10. Lingakattu
11. Arakkuthylam
12. Anupaanam and thunaimarunthu

III.Answer Briefly:

(10x3=30)

13. Vanga chunnam
14. Pooraennai
15. Vediuppudhraavagam
16. Kilinjilmezhu
17. Poonaagachatthu
18. Thirithodamaatthirai
19. Chandra kalaalepam
20. Pindathylam
21. Thenkaaikshaaram
22. Nandu theeneer

QP code:

Reg. No.:

KERALA UNIVERSITY OF HEALTH SCIENCES
THIRD PROFESSIONAL B.S.M.S DEGREE EXAMINATIONS (2016 SCHEME)

MODEL QUESTION PAPER

NOI NAADAL - I (SIDDHA PATHOLOGY)

Time : 3 hrs

Marks : 100

Answer all the questions

I. Essays

(2X15=30)

1. Explain - thamaraga noi in the following headings a. types, b. signs and symptoms, c. curable and incurable conditions
2. Describe in details about weapons of Siddha physician (envagai thervu)

II. Short notes

(10×5=50)

3. Mention the basic properties of vaadham, and its location?
4. Explain the theriyar view of sparism examination
5. Write the synonyms, causes and premonitory symptoms, types of kalleeral noigal.
6. Marana naadi kurikunangal in detail
7. Explain the conditions associated with feeble pulsation and rapid pulsation with suitable poems
8. Perunkalichal noi?
9. Write about the avasthai of soul explained by valladhi naadi
10. Write the manifestation of increased, senner and saaram
11. Discuss about the etiological factors of the several diseases.
12. Explain the pathway of dasanaadi in relationship with dasa vayu

III. Answer briefly

(10×2=20)

13. Write the symptoms of death according to the voice ?
14. Diagnosis of taste in relation to death ?
15. Types of kalleral, manneral noi ?
16. Ascertaining death conditions by touch (Sparisam) ?
17. Which naadi incorporated in infertility and pregnancy
18. Describe manikkadai nool and explain the disease mentioned in of 7
19. Write about the neerkkuri presentation of kaamalai noi, irudhaya roham
20. Write about the abnormal presentation of stools
21. What are the signs and symptoms of pakkavayu
22. Write about the different taste which normalizes the three humours with poem reference.

QP code:

Reg. No.:

KERALA UNIVERSITY OF HEALTH SCIENCES
THIRD PROFESSIONAL B.S.M.S DEGREE EXAMINATIONS (2016 SCHEME)
MODEL QUESTION PAPER
NOI NAADAL - II (PRINCIPLES OF MODERN PATHOLOGY)

Time : 3 hrs

Marks : 100

Answer all the questions

I.Essays:

(2X15=30)

1. Define inflammation and explain the chemical mediators of inflammation.
2. Write about the cellular adaptations in detail with suitable examples.

II.Short notes:

(10×5=50)

3. Liver function test
4. Define infarction? and explain different types of it.
5. Systemic Lupus Erythematosus.
6. Explain the clinical manifestation of syphilis
7. Discuss the different types of chemical carcinogens
8. How granuloma is formed? Discuss the pathogenesis
9. Define cytogenetics and write about the karyotyping procedure and its usage
10. Define injury and explain the ischemia reperfusion injury.
11. Describe different types of amyloidosis in detail
12. Write about the Ridley Jopling classification of leprosy and explain erythema nodosum leprosum

III.Answer briefly:

(10×2=20)

13. Virchow's signs of inflammation
14. Aplastic anaemia
15. Plague
16. Thrombocytopenia
17. Botulism
18. Clinical features of malaria
19. Military tuberculosis
20. Wet gangrene
21. Transfusion reaction
22. Stages of Neoplasia

QP code:

Reg. No.:

KERALA UNIVERSITY OF HEALTH SCIENCES
THIRD PROFESSIONAL B.S.M.S DEGREE EXAMINATIONS (2016 SCHEME)
MODEL QUESTION PAPER

NOI ANUGAVIDHI OZHUKKAM (HYGIENE AND COMMUNITY MEDICINE
INCLUDING NATIONAL HEALTH POLICIES AND STATISTICS)

Time : 3 hrs

Marks : 100

Answer all the questions

I. Essays:

(2X15=30)

1. Explain about water-uses-sources-pollution and its related diseases, purification and distribution, water treatment methods.
2. Explain -food, six tastes, three types of food, toxicity, adulteration, food borne diseases, prevention and control.

II. Short notes:

(10×5=50)

3. The five landscapes - description, occurrence of diseases.
4. Occupational hazards.
5. Vaasthu.
6. Disposal of human corpse.
7. Seasonal regimen.
8. Effects of heat stress.
9. Thrithoda sama porulgal.
10. Types of vessels and their effect on food preparation.
11. Traditional methods of control and prevention of communicable diseases
12. National health programmes.

III. Answer briefly:

(10×2=20)

13. Panchakarpa rules.
14. Sleeplessness.
15. National child survival and safe motherhood programme.
16. Hookworm infestation.
17. Bio cleansing and detoxification procedures in Siddha medicine
18. Diet regimen (patthiyam and apatthiyam) for oil bath
19. Nandu kuzhi neer.
20. Preventive aspects of traditional fumigation methods
21. Madhu, Mattu.
22. Body fire.

QP code:

Reg. No.:

KERALA UNIVERSITY OF HEALTH SCIENCES
THIRD PROFESSIONAL B.S.M.S DEGREE EXAMINATIONS (2016 SCHEME)
MODEL QUESTION PAPER
SATTAM SAARNTHA MARUTHUVAMUM NANJU MARUTHUVAMUM
(FORENSIC MEDICINE AND TOXICOLOGY)

Time: 3 hrs

Marks : 100

Answer all the questions

I. Essays:

(2x15=30)

1. Define drowning. Write about the types, pathophysiology, autopsy findings and its medico-legal importance.
2. Explain about signs, symptoms, treatment, autopsy findings and medico-legal importance of lead poisoning.

II. Short notes:

(10x5=50)

3. Professional misconduct
4. Medico-legal importance of age.
5. MTP act 1971
6. Delusion
7. Exhumation
8. Grievous injuries
9. Starvation
10. Botulism
11. Strychnos nux- vomica poisoning
12. War gases

III. Answer briefly:

(10x2=20)

13. Rule of nine
14. Define inquest and its types
15. Suspended animation
16. IPC section 304 B
17. Bestiality
18. Ideal Suicidal Poison
19. Cocaine bugs
20. Difference between poisonous and non poisonous snakes.
21. Siddha treatment for tobacco poisoning.
22. Vitriolage

QP code:

Reg. No.:

KERALA UNIVERSITY OF HEALTH SCIENCES
THIRD PROFESSIONAL B.S.M.S DEGREE EXAMINATIONS (2016 SCHEME)
MODEL QUESTION PAPER
RESEARCH METHODOLOGY AND MEDICAL STATISTICS

Time : 3 hrs

Marks : 100

Answer all the questions

I. **Essays:** (2X15=30)

1. Explain in details about types and phases of clinical trials
2. Write in detail about the pre-clinical research and qualitative research studies

II. **Short notes:** (10×5=50)

3. Literary research
4. IPR
5. Define descriptive study and its types
6. Write about the biases and disadvantages of case-control studies
7. Types of sampling
8. Measures of central tendency
9. Brief about pharmacovigilance
10. Write about the protocols used for various study design
11. Write about the comparison of three analytical studies
12. TKDL

III. **Answer briefly:** (10×2=20)

13. Define hypothesis
14. Types of data
15. Chi square test
16. Blinding and its types
17. Uses of biostatistics
18. Steps in research project
19. Types of objectives
20. What are the source used for literature research
21. Paired 't' test
22. Brief about ANOVA

QP code:

Reg. No.:

KERALA UNIVERSITY OF HEALTH SCIENCES
FINAL PROFESSIONAL B.S.M.S DEGREE EXAMINATIONS (2016 SCHEME)

MODEL QUESTION PAPER
MARUTHUVAM (MEDICINE)

Time: 3 hrs

Marks : 100

Answer all the questions

- I. Essays:** (2x15=30)
1. Explain verupeyar, iyalbu, noi varum vazhi, types and treatment of Kamalai Noi.
 2. Write detail notes on definition, etiology, types and treatment of Ilaippu Noi.
- II. Short notes:** (10x5=50)
3. Difference between Amoebic and Bacillary dysentery.
 4. Line of treatment and treatment of Irumal Noi.
 5. Classification of Paandu Noi.
 6. Iraippu noi- mukutrm variations and its special medicine.
 7. Neerizhivu noi avathaigal.
 8. Aetiology and general symptoms of Thamaraga Noi.
 9. Short note on Puravazhi Suram.
 10. Explain any 5 types of Naarum kazhichal and preparation of Linga Mezhugu.
 11. Diagnosis and treatment of Pakkavaayu.
 12. Note on Suvaiinmai and its treatment.
- III. Answer briefly:** (10x2=20)
13. 5 types of Vikkal according to the origin.
 14. Thaai paal kudineer.
 15. Alli kizhangu podi.
 16. Special medicine for Azhal peruvayiru.
 17. Mandara- Pakka mandara kasam
 18. Write names of Perungazhichal noi types
 19. Define Kurarkkammal and write the curable and incurable conditions.
 20. Differentiating features of Ahal keevayu and Valiazhal keelvayu
 21. Medicines to strengthen 7 udal kattugal
 22. Brief about Thelineer.

QP code:

Reg. No.:

KERALA UNIVERSITY OF HEALTH SCIENCES
FINAL PROFESSIONAL B.S.M.S DEGREE EXAMINATIONS (2016 SCHEME)
MODEL QUESTION PAPER

VARMAM, PURAMARUTHUVAM AND SIRAPPU MARUTHUVAM
(VARMAM THERAPY, EXTERNAL THERAPY AND SPECIAL MEDICINE)

Time : 3 hrs

Marks : 100

Answer all the questions

I. Essays:

(2x15=30)

- 1) Write in detail about Parkinsonisms, its etiology, pathology, clinical features, investigation and its management.
- 2) Write an essay on varma points from head and neck region , explain about 7 varmam points with location, deadline, symptoms, medicines and retrieval techniques

II. Short notes:

(10x5=50)

- 3) Periarthritis shoulder
- 4) Explain about Adanagal
- 5) Thirumeni Thylam
- 6) Pranayamam and its benefits
- 7) Serankottai karpam
- 8) Brammai noi
- 9) Anxiety
- 10) Medicine used in varmam injury
- 11) Dislocation of shoulder joints
- 12) Explain about Podi Thimirthal

III. Answer briefly:

(10x2=20)

- 13) Salabasanam
- 14) Vembu karpam
- 15) Treatment for vadha kligai
- 16) Coxa vara
- 17) Delusions types
- 18) Thattal- uses
- 19) Suronitha paithiyam
- 20) Scurvy
- 21) Nasiyam uses
- 22) Abisitha moolam

QP code:

Reg. No.:

KERALA UNIVERSITY OF HEALTH SCIENCES
FINAL PROFESSIONAL B.S.M.S DEGREE EXAMINATIONS (2016 SCHEME)
MODEL QUESTION PAPER

ARUVAI, THOL MARUTHUVAM (SURGERY INCLUDING DENTISTRY AND DERMATOLOGY)

Time: 3 hrs

Marks : 100

Answer all the questions

I. Essays:

(2x15=30)

1. Discuss in detail about Kutta Noi.
2. Discuss the types, clinical features and treatment for Mega Kattigal.

II. Short notes:

(10x5=50)

3. Difference between inguinal and femoral hernia
4. Types and clinical features of Korukku Noi
5. Kandamaalai
6. Septic shock
7. Types of fumigation (Pugai) and indications
8. Nagapadalam and its surgical treatment
9. Leucoderma
10. Healing and non healing ulcers
11. Fissure in - ano
12. Pre and post operative care

III. Answer briefly:

(10x2=20)

13. Mudamayir- comparison with modern aspect
14. Puzhuvettu
15. Treatment for Peenisam
16. Enbu silaipunn
17. Treatment for Kiranthi noi
18. Clinical features of Carcinoma Breast
19. Dental caries
20. Thrombophlebitis
21. Varicocele
22. Septicemia

QP code:

Reg. No.:

**KERALA UNIVERSITY OF HEALTH SCIENCES
FINAL PROFESSIONAL B.S.M.S DEGREE EXAMINATIONS (2016 SCHEME)**

MODEL QUESTION PAPER

SOOL , MAGALIR MARUTHUVAM (OBSTETRICS AND GYNAECOLOGY)

Time : 3 hrs

Marks : 100

Answer all the questions

- I. **Essays:** (2x15=30)
1. Explain about carcinoma of cervix, stages and its management
 2. Define Abortion and its types, clinical features and treatment.
- II. **Short notes:** (10x5=50)
3. Sool magotharam
 4. Gunaavaathanam
 5. Nithamba soolai
 6. Normal mechanism of labour
 7. Intrauterine growth restriction
 8. Placental previa
 9. Menstrual cycle
 10. Penn maladu clinical features and its treatment
 11. Poly cystic ovarian diseases
 12. Ante natal care.
- III. **Answer briefly:** (10x2=20)
13. Perumpaadu- classification and treatment
 14. Types of pelvis
 15. Polyps
 16. Medicines to improve lactation
 17. Face presentation
 18. Sivanar vembu poochu
 19. Syphilis
 20. Vesicovaginal fistula
 21. Sittramutti kashayam
 22. Chocolate cyst

QP code:

Reg. No.:

KERALA UNIVERSITY OF HEALTH SCIENCES
FINAL PROFESSIONAL B.S.M.S DEGREE EXAMINATIONS (2016 SCHEME)
MODEL QUESTION PAPER
KUZHANTHAI MARUTHUVAM (PAEDIATRICS)

Time : 3 hrs

Marks : 100

Answer all the questions

- I. **Essays:** (2x15=30)
1. Write in detail about Kanam, and its classification with modern aspect.
 2. Write in detail about cerebral palsy, its classification and management.
- II. **Short notes:** (10x5=50)
3. Purakarananoigal according to Yugimuni.
 4. Sevi noigal with modern aspect.
 5. Hemodynamics of ASD & VSD.
 6. Bala vaatham & its types.
 7. Diphtheria.
 8. Rheumatic fever.
 9. Respiratory disorders in Newborn.
 10. Define Amaram & Malaikann and its treatment.
 11. Karappan
 12. Muscular dystrophy.
- III. **Answer briefly:** (10x2=20)
13. Cushing's syndrome.
 14. ADHD.
 15. Congenital pyloric stenosis.
 16. Kiranthi & its types.
 17. Neonatal reflexes.
 18. Kazhichal & its types.
 19. Lactose intolerance.
 20. Kaamalai & its types.
 21. APGAR Score.
 22. 21Trisomy.

3.7 Internal assessment component

Minimum three internal examinations shall be conducted during each phase of B.S.M.S course. Average of the better of two performances shall be calculated for internal assessment of theory, practical/ clinical and viva voce in which final assessment examination is university Model examination and is compulsory. Minimum marks required for internal assessment is 35%. Internal Assessment mark of a subject shall not exceed the class average of 75%. Securing minimum 35% of internal assessment marks are mandatory for gaining eligibility for appearing examinations only. This shall not be considered for awarding pass to the subject concerned.

The following facts may be taken into consideration in determining class work in the subject:-

Regularity in attendance b) Periodical tests and c) Practical work.

3.8 Details of practical/clinical practicum exams

As shown under 3.3 SCHEME OF EXAMINATION SHOWING MAXIMUM AND MINIMUM MARKS (Table 2)

3.9 Number of examiners needed (Internal & External) and their qualifications

There shall be one Internal Examiner and one External Examiner appointed for each subject/paper or as per the norms existing in the University. Teaching faculties who possessed with minimum three years of teaching experience after obtaining Post Graduation degree shall be appointed as Internal/ External examiner or as per the statutory council regulations.

3.10 Details of viva: division of marks

As shown under 3.3 SCHEME OF EXAMINATION SHOWING MAXIMUM AND MINIMUM MARKS (Table 2)

4 INTERNSHIP

4.1 Eligibility for internship

Duration of Compulsory Rotatory Residential Internship (C.R.R.I) shall be one year and the student shall be eligible to join the C.R.R.I Programme only after passing all the subjects in the Final Professional examinations as per statutory council regulations.

To become eligible for joining the compulsory internship programme, all four professional examinations shall be passed within a period of maximum nine years including all chances as mentioned in 3.3.

4.2 Details of Internship Training

(1) Duration of Compulsory Rotatory Internship shall be one year and the student shall be eligible to join the compulsory internship programme after passing all the subjects from first to the final professional examinations and the internship programme shall be start after the declaration of the result of final professional examination.

(2) The Internship Programme and time distribution shall be as follows:-

- (a) The interns shall receive an orientation regarding programme details of internship programme, in an orientation workshop, which shall be organised during the first three days of the beginning of internship programme and a work book shall be given to each intern, in which the intern shall enter date wise details of activities undertaken by him during his training;
- (b) Every intern shall provisionally register himself with the concerned State Board or Council and obtain a certificate to this effect before joining the internship program;
- (c) The daily working hours of intern shall be not less than eight hours;
- (d) Normally one-year internship programme shall be divided into clinical training of six months in the Siddha hospital attached to the college and six months in Primary Health Centre or Community Health Centre or Rural Hospital or District Hospital or Civil Hospital or any Government Hospital of modern medicine:

Provided that where there is no provision or permission of the State Government for allowing the graduate of Siddha in the hospital or dispensary of modern medicine, the one-year internship shall be completed in the Hospital of Siddha College.

(3) The clinical Training of six or twelve months, as case may be, in the Siddha hospital attached to the college shall be conducted as follows:-

Sl.No.	Departments	Distribution of six months	Distribution of twelve months
(i)	Maruthuvam	Forty-five days	Three months
(ii)	Varmam, Puramaruthuvam and Sirappumaruthuvam	Forty-five days	Three months
(iii)	Aruvai, Thol Maruthuvam	One month	Two months
(iv)	Sool, Magalir Maruthuvam	One month	Two months
(v)	Kuzhanthai Maruthuvam	Fifteen days	One month
(vi)	Avasara Maruthuvam	Fifteen days	One month

(4) Six months training of interns shall be carried out with an object to orient and acquaint the intern with the National Health Programme and the intern shall undertake such training in one of the following institutes, namely:-

- (a) Primary Health Centre;
- (b) Community Health Centre or District Hospital;
- (c) Any recognised or approved hospital of modern medicine;
- (d) Any recognised or approved Siddha hospital or dispensary;

The concerned Government may recognise all the above institutes mentioned in clauses (a) to (d) for taking training by interns.

(5) Detailed Guidelines for internship programme.- The guidelines for conducting the internship clinical training of six or twelve months in the Siddha Hospital attached to the college and the intern shall undertake the following activities in the respective department as shown below:-

(a) Maruthuvam- The duration of internship in this department shall be one and half month or three months with following activities:-

- (i) all routine works such as case taking, investigations, diagnosis and management of common diseases by Siddha medicine;
- (ii) routine clinical pathology work such as haemoglobin estimation, complete haemogram, urine analysis, microscopic examination of blood parasites, sputum examination, stool examination, neerkuri, neikuri mala parisodhanai, interpretation of laboratory data and clinical findings, and arriving at a diagnosis;
- (iii) training in routine ward procedures and supervision of patients in respect of their diet, habits and verification of medicine regime;

(b) Varmam, Puramaruthuvam and Sirappumaruthuvam- The duration of internship in this department shall be one and half month or three months and intern shall be practically trained to acquaint with the following activities:-

- (i) location of types of Varmam points;
- (ii) diagnosis of various pathological conditions due to application of Varmam procedures and techniques;
- (iii) procedures of Ilakkumuraigal with internal or external medication;
- (iv) various Puramaruthuvam procedures and techniques with special emphasize on Thokkanam;
- (v) fractures and dislocations and their management;
- (vi) geriatric care (Moopiyal);
- (vii) management of psychiatric cases (Ula Pirazhvu Noi); and
- (viii) kayakarpam (Rejuvenation therapy and yogam);

(c) Aruvai and Thol Maruthuvam- The duration of internship in this department shall be one month or two months and intern shall be practically trained to acquaint with the following activities:-

- (i) diagnosis and management of common surgical disorders according to Siddha principles;
- (ii) management of certain ailments such as fractures and dislocations;
- (iii) practical training of aseptic, antiseptics techniques and sterilization;
- (iv) intern shall be involved in pre-operative and post-operative managements;
- (v) practical use of anesthetic techniques and use of anesthetic drugs;
- (vi) radiological procedures, clinical interpretation of X-ray, Intra Venous Pyelogram, Barium meal, Sonography and Electro Cardio Gram;
- (vii) examinations of eye, ear, nose, throat and other parts of the body with the supportive instruments;
- (viii) surgical procedures and routine ward techniques such as-
 - (a) suturing of fresh injuries;
 - (b) dressing of wounds, burns, ulcers and similar ailments;
 - (c) incision of abscesses;
 - (d) excision of cysts;
 - (e) venesection; and
 - (f) application of Kaaranool in ano-rectal diseases;
- (ix) procedures like Anjanam, Nasiyam, Attaividal at Out-Patient Department level;
- (x) diagnosis and management of common dental disorders; and
- (xi) training in Blood Bank and transfusion procedures;

(d) Sool, Magalir Maruthuvam- The duration of internship in this department shall be one month or two months and intern shall be practically trained to acquaint with the following activities:-

- (i) antenatal and post-natal problems and their remedies; antenatal and post-natal care;
- (ii) management of normal and abnormal labours; and
- (iii) minor and major obstetric surgical procedures;

(e) Kuzhanthai maruthuvam- The duration of internship in this department shall be fifteen days or one month and intern shall be practically trained to acquaint with following activities:-

- I. care for new born child along with immunisation programme; and
- II. important pediatric problems and their management;

(f) Avasara maruthuvam (Casualty)- The duration of internship in this department shall be fifteen days or one month and intern shall be practically trained to acquaint with the following activities:-

- (i) identification of casualty and trauma cases and their first line management; and
- (ii) procedure for referring such cases to the identified hospitals.

4.3 INTERNSHIP TRAINING IN PRIMARY HEALTH CENTRE OR RURAL HOSPITAL OR DISTRICT HOSPITAL OR CIVIL HOSPITAL OR ANY GOVERNMENT HOSPITAL OF MODERN MEDICINE:

During the six months internship training in Primary Health Centre, Community Health Centre or District Hospital or any recognized or approved hospital of Modern Medicine or Siddha Hospital or Dispensary, the interns shall-

- (i) get acquainted with the routine of the Primary Health Centre and maintenance of their records;
- (ii) get acquainted with the routine working of the medical or non-medical staff of Primary Health Centre and be always in contact with the staff in this period;
- (iii) get familiarized with the work of maintaining the relevant register like daily patient register, family planning register, surgical register and take active participation in different Government Health Schemes or Programmes; and
- (iv) participate actively in different National Health Programmes implemented by the State Government.

4.4 INTERNSHIP TRAINING IN RURAL SIDDHA DISPENSARY OR HOSPITAL

During the six months internship training in Rural Siddha dispensary or Hospital, interns shall-

- (i) get acquainted with the diseases more prevalent in rural and remote areas and their management; and
- (ii) involve in teaching of health care methods to rural population and also various immunization programmes.

4.5 ASSESSMENT

After completing the assignment in various Sections, the interns have to obtain a completion certificate from the head of the Section in respect of their devoted work in the Section

concerned and finally submit to the Principal or Head of the institute so that completion of successful internship can be granted.

4.6 Model of Internship Mark Lists

No marklist for Interns.

Internship completion certificate: Issued from the concerned Institution

4.7 Extension rules

No leave will be permitted during internship period. If an intern takes leave in his/her internship period, that period shall be compensated in the same department during extension period. Only after completion of extension period, the intern may be granted with Internship completion certificate by the head of the institution

5. ANNEXURES

5.1 Check Lists for Monitoring

Log Book, Seminar Assessment etc. to be formulated by the curriculum committee of the concerned Institution.

