

KERALA UNIVERSITY OF HEALTH SCIENCES

THRISSUR - 680 596, KERALA



REGULATIONS, CURRICULUM, AND SYLLABUS OF

B.A.M.S COURSE

(With effect from 2012-13 admission)

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1. AIMS AND OBJECTIVES

The bachelor of Ayurved education will aim at producing graduates, having profound knowledge of Ashtanga Ayurved supplemented with knowledge of scientific advances in modern medicine along with extensive practical training; who will become efficient physicians and surgeons fully competent to serve the health care services.

2. ADMISSION QUALIFICATION

12th standard with science or any other equivalent examination recognized by concerned State Governments and Education boards provided the candidate passes the examination with 50% aggregate marks in the subjects of Physics, Chemistry, Biology and 50% in Biology separately.

For foreign students any other equivalent qualification to be approved by the University will be allowed.

3. SELECTION OF STUDENTS

The selection of students for the BAMS course shall be made strictly on merit as decided by the Govt of Kerala/Kerala University of Health Sciences and as per guidelines of the respective council.

3.1 REGISTRATION

A candidate on admission to the BAMS course shall apply to the University for Registration

- By making a formal application in the prescribed format.
- Original mark lists of the qualifying examination.
- Transfer certificate from the previous institution.
- Allotment letter from the competent authority who conducted the admission process
- Equivalency and migration certificate where ever needed.
- Original SSLC/Equivalent Certificate.
- The fees prescribed for the registration.

4. DURATION OF COURSE

Degree Course 5-1/2 years. Comprising

I Professional	-	12 months
II Professional	-	12 months
III Professional	-	12 months
Final Professional	-	18 months
Compulsory rotatory Internship	-	12 months

5. DEGREE TO BE AWARDED

Ayurvedacharya (Bachelor of Ayurvedic Medicine and Surgery – B.A.M.S).

The candidate shall be awarded Ayurvedacharya (Bachelor of Ayurvedic Medicine and Surgery – BAMS) degree after passing the final examination, after completion of prescribed course of study extending over; prescribed course of study extending over; prescribed period and thereafter satisfactorily completing the compulsory rotatory internship extending over twelve months.

6. MEDIUM OF INSTRUCTION

Sanskrit, Hindi, any recognized regional-language or English

7. EXAMINATION:

- i. Theory examination shall have minimum 20% short answer questions having maximum mark up to 40% and minimum 4 questions for long explanatory answer having maximum marks up to 60%. These questions shall cover entire syllabus of subject.
- ii. A candidate obtaining 75% marks in the subject shall be awarded distinction in the subject.
- iii. The minimum marks required for passing the examination shall be 50% in theory and practical separately in each subject.
- iv. The supplementary examination will be held within 6th months of regular examination and failed students shall be eligible to appear in its supplementary examinations as the case may be.
- v. In case a student fails to appear in regular examination for cognitive reason, he/she will appear in supplementary examination as regular students. In such cases his/her non appearance in regular examination will not be treated as an attempt. Such students after passing examination will join the studies with regular students and appear for next professional examination after completion the required period of study .
- vi. The following facts may be taken into consideration in determining class work in the subject:-
 - i. Regularity in attendance
 - ii. Periodical tests
 - iii. Practical copy

7.1 FIRST PROFESSIONAL EXAMINATION

- i) The first professional examination shall be at the end of one Academic year of Professional session. The First Professional session will ordinarily starts in July.
- ii) The first professional examination shall be held in the following subjects:-
 1. Padarth Vigyan avam Ayurved Ithihas
 2. Sanskrit
 3. Kriya Sharir (Physiology)
 4. Rachna Sharir (Anatomy)
 5. Maulik Siddhant avam Ashtang Hridaya (Sutra Sthan)
- iii) A student failed in not more than 2 subjects shall be held eligible to keep the terms for the second Professional Course; however he/she will not be allowed to appear for second professional examination unless he/she passes in all the subjects of the first Professional.

7.2 SECOND PROFESSIONAL EXAMINATION

- i) The second professional session shall start every year in the month of July following completion of first professional examination.
The second professional examination shall be ordinarily held and completed by the end of month of May/June every year after completion of one year of second professional session.
- ii) The second professional examination shall be held in the following subjects:-
 1. Dravyaguna Vigyan (Pharmacology and Materia Medica)
 2. Rasashastra-Bhaishajya Kalpana (Pharmaceutical Science)
 3. Agad tantra Vyavhar Ayurveda evam Vidhi Vaidyaka (Toxicology and Medical Jurisprudence)
 4. Charak- Samhita -Purvardh
- iii) A student failed in not more than 2 subjects shall be held eligible to keep the terms for the third Professional examination ; however he/she will not be allowed to appear for third professional examination unless he/she passes in all the subjects of the second Professional.

7.3 THIRD PROFESSIONAL EXAMINATION

i) The third professional session shall start every year in the month of July following completion of second professional Examination.

The third professional examination shall be ordinarily held and completed by the end of month of May/June every year after completion of one year of third professional session.

ii) The third professional examination shall be held in the following subjects:-

1. Roga Nidan Vikriti Vigyan (Pathology & Microbiology)
2. Charak-Samhita-Uttarardh
3. Swasta Vritta & yoga (Preventive and Social Medicine & Yoga)
4. Prasuti & Striroga (Gynaecology & Obstetrics)
5. Bal Roga (Paediatrics)

iii) A student failed in not more than 2 subjects shall be held eligible to keep the terms for the final Professional examination ; however he/she will not be allowed to appear for final professional examination unless he/she passes in all the subjects of the third Professional examination.

7.4 FINAL PROFESSIONAL EXAMINATION

i) The final professional session will be of 1 and ½ year duration and shall start every year to the month of July following completion of third professional Examination.

The final professional examination shall be ordinarily held and completed by the end of month of Oct/Nov every year after completion of one and half year of final professional session.

ii) The final professional examination shall comprise of the following subjects:-

1. Shalya Tantra (General Surgery)
2. Shalaky Tantra (Diseases of Head & Neck including Ophthalmology, ENT and Dentistry)
3. KayaChikitsa (Internal Medicine –including Manas Roga, Rasayan & Vajikarana).
4. Panchakarma
5. Research Methodology and Medical – statistics.

8. INTERNAL ASSESSMENT MARKS

Three internal examinations shall be conducted in each subject during a year and average marks of two best performances shall be taken into consideration for the award of internal marks. Marks of Evaluation by other methods like assignments, seminars, projects etc.. can be added to the internal marks. A candidate must obtain 35% of marks in internal assessment to be eligible to write the university examination. The class average of internal assessment marks should not cross 75%.

9. CRITERIA FOR PASS

A candidate shall be declared as pass if he secures 50% of marks in each subject in theory and practical examinations separately. In the practical section (Including viva voce) a candidate shall secure 50% marks.

10. COMPULSORY INTERNSHIP

Duration of Internship: 1 year

The student will join the compulsory internship programme after passing the final professional examination. The internship programme will start after the declaration of the result of final professional examination. The period of the internship will be of one year.

Internship Programme and time distribution will be as follows:-

1. The interns will receive an orientation regarding programme details of internship programme along with the rules and regulations, in an orientation workshop, which will be organized during the first three days of the beginning of internship programme. A workbook will be given to each intern. The Intern will enter date wise details of activities undertaken by him/her during his/her training.
 2. Every intern will provisionally register himself with the concerned State Board/Council and obtain a certificate to this effect before joining the Internship program.
 3. Daily working hours of intern will be not less than eight hours.
 4. Normally one year Internship programme will be divided into clinical training of 6 months in Ayurvedic Hospital attached to the college and 6 months in PHC/CHC/Rural Hospital/District Hospital/Civil Hospital or any Govt. Hospital of modern medicine .But where there is no provision /permission of the State Government for allowing the graduate of Ayurveda in the hospital/Dispensary of Modern Medicine ,the one year internship will be completed in the hospital of Ayurved college.
- A. Clinical Training of six/twelve months as case may be in the Ayurvedic hospital attached to the college will be conducted as follows:-

Departments	Distribution of 6 months	Distribution of 12 months
1. Kayachikitsa	2 months	4 months
2. Shalya	1 months	2 months
3. Shalakya	1 months	2 months
4. Prasuti & Striroga	1 months	2 months
5. Kaumarbhritya	15 days	1 month
6. Panchakarma	15 days	1 month

- B. Six months training of interns will be carried out with an object to orient and acquaint the intern with National health programme. The intern will have to join in one of the following institute for undertaking such training.
- (a) Primary Health Centre
 - (b) Community Health Centre/District Hospital
 - (c) Any hospital of modern medicine
 - (d) Any Ayurved hospital or Dispensary

All the above centres (a, b, c, and d) will have to be recognized by the concerned University and concerned Govt. designated authority for taking such a training.

Detail Guideline for training programme.

Guidelines for conducting the internship clinical training of 6/12 months in the Ayurvedic Hospital attached to the college.

The intern will undertake following activities in respective departments as shown below:-

1. Kayachikitsa Duration : 2 months/4 months

- i. All routine work such as case taking, investigations, diagnosis and management of common diseases by Ayurvedic Medicine
- ii. Routine clinical pathological work i.e. Haemoglobin estimation, complete haemogram, urine analysis, microscopic examination of blood parasites, sputum examination, stool examination etc. Mutra evum Mala pariksha by Ayurvedic method. 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 schedule.

2. Panchakarma-Duration:15 days /1 month

- i) Panchakarma procedures and techniques regarding poorva karma, pradhan karma and paschat Karma.

3. Shalya -Duration: 1 month/2 months

Intern should be trained to acquaint with

- i) Diagnosis and management of common surgical disorders according to Ayurvedic principles.
ii) Management of certain surgical emergencies such as fractures and dislocations, Acute Abdomen etc.
iii) Practical training of aseptic and antiseptic techniques, sterilization etc.
iv) Intern should be involved in pre-operative and post-operative managements.
v) Practical use of anaesthetic techniques and use of anaesthetic drugs
vi) Radiological procedures, clinical interpretation of X-ray, IVP, Barium meal, sonography etc.
vii) Surgical procedures and routine ward techniques such as:-
i. Suturing of fresh injuries
ii. Dressing of wounds, burns, ulcers etc.
iii. Incision of abscesses
iv. Excision of cysts.
v. Venesection etc.
vi. Application of Ksharasutra in and rectal diseases.

4. Shalakyas-Duration:1 Month/2months

Intern should be trained to acquaint with

- a) Diagnosis and management of common surgical disorders according to Ayurvedic principles.
b) Intern should be involved in pre-operative and Post-operative managements.
c) Surgical procedures in Ear,Nose,Throat,Dental problems,Ophthalmic problems
d) Examinations of Eye,Ear,Nose,Throat and refractive error etc,with the supportive instruments OPD
e) Procedures like Anjana Karma, Nasya, Raktamokshan,'Karnapuran', Shirodhara, putpak, Kawal, Gandush etc.at OPD level.

5. Prasuti & Stiroga-Duration:1 month/2months

Intern should be trained to acquaint with

- a) Antenatal and post-natal problems and their remedies, antenatal and post-natal care.
b) Management of normal and abnormal labours.
c) Minor and major obstetric surgical procedures etc.

6. Balroga-Duration: 15days/1 month

Intern should be trained to acquaint with

- a) Antenatal and Post-natal problems and their remedies, antenatal and Post-natal care also by Ayurvedic Principles and medicine.
b) Antenatal and post-natal emergencies.
c) Care of new born child along with immunization programme.
d) Important paediatric problems and their Ayurvedic managements.

B. PHC/Rural Hospital/District Hospital /Civil Hospital or any Govt.Hospital of modern medicine.

Guidelines for conducting six months internship training in primary Health Centre, Community Health Centre/District Hospital; Any Hospital of modern medicine any Ayurved hospital or Dispensary

Intern should get acquainted with-

- i. Routine of the PHC and maintenance of their records.
- ii. They should be acquainted with the routine working of the medical/non-medical staff of PHC and be always in contact with the staff in this period.
- iii. They should be familiar with work of maintaining the register e.g. daily patient register, family planning register, surgical register and take active participation in different government health schemes/programme.
- iv. They should participate actively in different National Health Programmes of Government of the State/District

C. Casualty Section of any recognized hospital of modern medicine.

Identification of casualty and trauma cases and their first aid treatment. Also procedure for referring such cases to the identified hospitals.

D. Rural Ayurvedic dispensary/Hospital

Diseases more prevalent in rural and remote areas and their management.

Teaching of health care methods to rural population and also various immunization programmes.

11. ASSESSMENT

After completing the assignment in various sections, they have to obtain a certificate from the head of the Section in respect of their devoted work in the section concerned and finally submitted to Principal /Head of the Institute so that completion of successful internship can be granted.

12. MIGRATION AND TRANSFER

Migration and transfer will not be permitted after student has registered with the course of study with the university, this will be applicable during the period of internship also.

13. SCHEME OF EXAMINATION

13.1 NUMBER OF PAPERS AND MARKS FOR THEORY /PRACTICAL

Name of the subject	No: of Hours of teaching			Details of maximum marks			
	Theory	Practical	Total	Number of papers	Theory	Practical	Total
1st Professional							
1. Padarth Vigyan evam Ayurved ka Itihas	100	-----	100	Two	200	-----	200
2. Sanskrit	200	-----	200	One	100	-----	100
3. Kriya Sharir	200	200	400	Two	200	100	300
4. Rachna Sharir	300	200	500	Two	200	100	300
5. Maulik Siddhant evam Asthanga	150	-----	150	One	100	-----	100

Hridayaya(Sutra Sthana)							
2nd Professional							
1. Dravyaguna Vigyan	200	200	400	Two	200	200	400
2. Agadatantra, Vyavhar Ayurvednevam Vidhi Vaidyak	200	100	300	One	100	50	150
3. Rasashastra evam Bhaishjya Kalpana Part-1	200	200	400	Two	200	200	400
4. Charak Samhita (Purvardh)	200	-----	200	One	100	-----	100
3rd Professional							
1. Roga Vigyan Evam Vikriti Vigyan	200	100	300	Two (01- Pathology 01- Ayurveda)	200	100	300
2. Swastha Vritta & Yoga	200	100	300	Two	200	100	300
3. Prasuti Tantra & Striroga	200	100	300	Two	200	100	300
4. Balroga	100	100	200	One	100	50	150
5. Charak Samhita(Uttarard)	200	-----	200	One	100	-----	100
Final Professional							
1. Kayachikitsa	300	200	500	Two	200	100	300
2. Panchkarma	100	200	300	One	100	50	150
3. Shalya Tantra	200	150	350	Two	200	100	300
4. Shalakya Tantra	200	150	350	Two	200	100	300
5. Research Methodology & Medical Statistics	50	-----	50	One	50	-----	50

NOTE: The period of theory and practical shall not be less than 60 minutes (1 hour). The duration of the practical of clinical; subjects and Rachana Sharir (Dissection) shall be of at least 120 minutes (2 hours)

13.2 CLINICAL TRAINING OF THE STUDENT WILL START FROM THIRD YEAR ONWARDS

13.3 THE CLINICAL TRAINING IN THE HOSPITAL ATTACHED WITH COLLEGE TO THE STUDENTS SHALL BE AS FOLLOWS:-

i) Kayachikitsa (Indoor and Outdoor) 18 Months

a) Kayachikitsa (Samanya) 6 Months

b) Manasroga 3 Months

c) Rasayan & Vachikaran 3 Months

d) Panchakarma 3 Months

e) Rog Vigyan Vikruti Vigyan 3 Months

- ii) **SHALYA** (Indoor and Outdoor) 9 Months
- a) Shalya (Samanya) 3 Months(at least one month in OT)
b) Shalya(Kshar & Anushastra Karma) 3 Months(at least one month in OT)
c) Ksharsutra 2 Months
d) Anaesthesia 15 Days
e) Radiology 15 Days
- iii) **Shalakya Tantra**(Indoor and Outdoor) 4 Months(at least one month in OT)
- iv) **Prasuti Tantra Avam Striroga** 3 Months(Outdoor and Indoor)
- v) **Kaumar Bhritya** (Outdoor and Indoor) 1 Month
- vi) **Atyayik(Casualty)** 2 Months

14. QUALIFICATION & EXPERIENCE FOR TEACHING STAFF FOR UG TEACHERS :
(Applicable for direct recruitment but age will be relaxed in case of promotion)

i) ESSENTIAL:

- a) A degree in Ayurved from a University established by law or a statutory Board/Faculty/Examining Body of Indian Medicine or its equivalent as recognized under Indian Medicine Central Council Act, 1970.
b) A Post-graduate qualification in the subject/specialty concerned included in the schedule to Indian Medicine Central Council Act, 1970.

ii) EXPERIENCE:

- a) ***For the post of professor:***
Total teaching experience of **ten** years in concerned subject is necessary out of which there should be **five** years teaching experience as Reader/Associate Professor in concerned subject.
- b) ***For the post of Associate Professor (Reader):***
Teaching experience of five years in concerned subject. (Reader will be treated as Associate Professor).
- c) ***For the post of Asst.Professor (Lecturer) (age not exceeding 40 years).***
No teaching experience is required.Leturer will be treated as Asst.Professor.
- d) ***Qualification of the post of Head of Institution (Principal/Dean/Director):***
The qualification and experience prescribed for the post of professor shall be essential for these posts.

Note: In absence of the candidate of Post-graduate qualification in concern subject the candidate of the following subjects as mentioned against them shall be eligible for the post of Lecturer/Asst.Professor:-

<i>Speciality required</i>	<i>Name of the allied subject.</i>
1. Swastha Vritta	1. Kayachikitsa
2. Agadtantra	2. Dravyaguna/Rasashastra
3. Rog Vigyan	3. Kayachikitsa
4. Rachna Sharir	4. Shalya
5. Kriya Sharir	5. Samhita Siddhant
6. Shalakya	6. Shalya
7. Panchakarma	7. Kayachikitsa
8. Balroga	8.Prasuti&Styriroga /Kayachikitsa
9. Kayachikitsa	9. Manasroga
10. Shalya	10.Nischetana evam Ksha - Kirana

- a. The above provision of allied subject will be allowed for five years.
- b. The teacher(s) who had been considered eligible in the past on the basis of previous Regulation shall not be considered ineligible on the basis of amendment.

15. APPOINTMENT OF EXAMINER IN AYURVED:

No person other than Regular/Retired teacher with minimum three years teaching experience in the concerned subject shall be considered eligible for an examiner.

16. AWARD OF RANK

Ranks and medals shall be awarded on the basis of aggregate of the all university examinations of the particular course however a candidate who fails in one or more subject during the course shall be not eligible for the award of ranks and medals.

17. AWARD OF DEGREE

A candidate who passes entire subjects of the course and undergone internship satisfactorily for the specific period will be eligible for the award of degree during the ensuing convocation.

PADARTHA VIGYAN EVUM AYURVEDA ITIHAS
(Philosophy and History of Ayurveda)
Padartha Vigyanam
Theory- Two papers- 200 marks (100 each paper)
Total teaching hours: 150 hours

PAPER 1
PART-A

100 -Marks
50 -Marks

1. Ayurveda Nirupana

1. Lakshana of Ayu, composition of Ayu.
2. Lakshana of Ayurveda.
3. Lakshana and classification of Siddhanta.
4. Introduction to basic principles of Ayurveda and their significance.

2. Ayurveda Darshana Nirupana

1. Philosophical background of fundamentals of Ayurveda.
2. Etymological derivation of the word "Darshana". Classification and general introduction to schools of Indian Philosophy with an emphasis on: Nyaya, Vaisheshika, Sankhya and Yoga.
3. Ayurveda as unique and independent school of thought (philosophical individuality of Ayurveda).
4. Padartha: Lakshana, enumeration and classification, Bhava and Abhava padartha, Padartha according to Charaka (Karana-Padartha).

3. Dravya Vigyanam

1. **Dravya:** Lakshana, classification and enumeration.
2. **Panchabhuta:** Various theories regarding the creation (theories of Taittiriyanopanishad, Nyaya-Vaisheshika, Sankhya-Yoga, Sankaracharya, Charaka and Susruta), Lakshana and qualities of each Bhoota.
3. **Kaala:** Etymological derivation, Lakshana and division / units, significance in Ayurveda.
4. **Dik:** Lakshana and division, significance in Ayurveda.
5. **Atma:** Lakshana, classification, seat, Gunas, Linga according to Charaka, the method / process of knowledge formation (*atmanah jnasya pravrittih*).
6. **Purusha:** as mentioned in Ayurveda - Ativahikapurusha/ Sukshmarsharira/ Rashipurusha/ Chikitsapurusha/ Karmapurusha/ Shaddhatvatmakapurusha.
7. **Manas:** Lakshana, synonyms, qualities, objects, functions, dual nature of mind (*ubhayaatmakatvam*), as a substratum of diseases, penta-elemental nature (*panchabhutatmakatvam*).
8. Role of Panchamahabhuta and Triguna in Dehaprakriti and Manasaprakriti respectively.
9. Tamas as the tenth Dravya.
10. Practical study/application in Ayurveda.

4. Gunavigyaniam

1. Etymological derivation, classification and enumeration according to Nyaya-Vaisheshika and Charaka, Artha, Gurvadiguna, Paradiguna, Adhyatmaguna.
2. Lakshana and classification of all the 41 gunas.
3. Practical / clinical application in Ayurveda.

5. Karma Vigyaniam

1. Lakshana, classification in Nyaya.
2. Description according to Ayurveda.
3. Practical study/ application in Ayurveda.

6. Samanya Vigyaniam

- 6.1 Lakshana, classification.
- 6.2 Practical study/ application with reference to Dravya, Guna and Karma.

7. Vishesha Vigyaniam

1. Lakshana, classification.
2. Practical study/ application with reference to Dravya, Guna and Karma.
3. Significance of the statement "*Pravrittirubhayasya tu*".

8. Samavaya Vigyaniam

- 8.1 Lakshana
- 8.2 Practical study /clinical application in Ayurveda.

9. Abhava Vigyaniam

- 9.1 Lakshana, classification
- 9.2 Clinical significances in Ayurveda.

Padartha Vigyan and Ayurveda Itihas

PAPER II

100 Marks

PART A – Pramana /Pariksha – Vigyaniam

75 Marks

1. Pariksha

1. Definition, significance, necessity and use of *Pariksha*.
2. Definition of *Prama*, *Prameya*, *Pramata*, *Pramana*.
3. Significance and importance of *Pramana*, Enumeration of *Pramana* according to different schools of philosophy.
4. Four types of methods for examination in *Ayurveda* (Chaturvidha-Parikshavidhi), *Pramana* in *Ayurveda*.
5. Subsudation of different *Pramanas* under three *Pramanas*.
6. Practical application of methods of examination (Parikshavidhi) in treatment (Chikitsa).

2. Aptopdesha Pariksha/ Pramana

- Lakshana of Aptopadesha, Lakshana of Apta.
- Lakshana of Shabda, and its types.
- Shabdavritti-Abhidha, Lakshana, Vyanjana and Tatparyakhya. Shaktigrahahetu.
- Vaakya: Characteristics, Vaakyarthagyanahetu- Aakanksha, Yogyata, Sannidhi.

3. Pratyaksha Pariksha/ Pramana

1. Lakshana of Pratyaksha, types of Pratyaksha- Nirvikalpaka- Savikalpaka with description, description of Laukika and Alaukika types and their further classification.
2. Indriya-prapyakaritvam, six types of Sannikarsha.
3. Indriyanam lakshanam, classification and enumeration of Indriya. Description of Panchapanchaka, Penta-elemental nature of Indriya by Panchamahabhuta (*Panchabhautikatwa* of Indriya) and similarity in sources (*Tulyayonitva*) of Indriya.
4. Trayodasha Karana, dominance of Antahkaran.
5. Hindrances in direct perception (*pratyaksha-anupalabdhiikaaran*), enhancement of direct perception (Pratyaksha) by various instruments/ equipments, necessity of other *Pramanas* in addition to Pratyaksha.
6. Practical study/ application of Pratyaksha in physiological, diagnostic, therapeutic and research grounds.

4. Anumanapariksha/Pramana

1. Lakshana of Anumana. Introduction of Anumiti, Paramarsha, Vyapti, Hetu, Sadhya, Paksha, Drishtanta. Types of Anumana mentioned by Charaka and Nyayadarshana.
2. Characteristic and types of Vyapti.
3. Lakshana and types of Hetu, description of Ahetu and Hetwabhasa.
4. Characteristic and significance of Tarka.
5. Practical study/ application of Anumanapramana in physiological, diagnostic, therapeutics and research.

5. Yuktipariksha/ Pramana

1. Lakshana and discussion.
2. Importance in *Ayurveda*.
3. Practical study and utility in therapeutics and research.

6. Upamana Pramana

1. Lakshana.
2. Application in therapeutics and research.

7. Karya- Karana Siddhanta (Cause and Effect Theory)

1. Lakshana of Karya and Karana. Types of Karana.
2. Significance of Karya and Karana in *Ayurveda*.
3. Different opinions regarding the manifestation of Karya from Karana: Satkaryavada, Asatkaryavada, Parinamavada, Arambhavada, Paramanuvada, Vivartavada, Kshanabhangurvada, Swabhavavada, Pilupaka, Pitharpaka, Anekantavada, Swabhavoparamavada.

PART B- Ayurved Itihas

25 marks

1. Etymological derivation (Vyutpatti), syntactical derivation (Nirukti) and definition of the word Itihas, necessity of knowledge of history, its significance and utility, means and method of history, historical person (Vyakti), subject (Vishaya), time period (Kaal), happening (Ghatana) and their impact on Ayurveda.
2. Introduction to the authors of classical texts during Samhitakaal and their contribution: Atreya, Dhanwantari, Kashyapa, Agnivesha, Sushruta, Bhela, Harita, Charaka, Dridhabala, Vagbhata, Nagarjuna, Jivaka.
3. Introduction to the commentators of classical Samhitas – Bhattaraharicchandra, Jejjata, Chakrapani, Dalhana, Nishchalakara, Vijayarakshita, Gayadas, Arunadutta, Hemadri, Gangadhara, Yogindranath Sen, Haranachandra, Indu.
4. Introduction to the authors of compendiums (Granthasamgrahakaala) – Bhavmishra, Sharngadhara, Vrinda, Madhavakara, Shodhala, Govinda Das (Author of Bhaishajyaratnawali), Basavraja.
5. Introduction to the authors of Modern era –Gana Nath Sen, Yamini Bhushan Rai, Shankar Dajishastri Pade, Swami Lakshmiram, Yadavji Tikramji, Dr. P. M. Mehta, Ghanekar, Damodar Sharma Gaur, Priyavrat Sharma.
6. Globalization of Ayurveda – Expansion of Ayurveda in Misra (Egypt), Sri Lanka, Nepal other nations.
7.
 - a. Developmental activities in Ayurveda in the post-independence period, development in educational trends.
 - b. Establishment of different committees, their recommendations.
 - c. Introduction to and activities of the following Organizations :- Department of AYUSH, Central Council of Indian Medicine, Central Council for Research in Ayurvedic Sciences, Ayurvedic Pharmacopeia commission, National Medicinal Plants Board, Traditional Knowledge Digital Library (TKDL)
 - d. Introduction to the following National Institutions :
 - National Institute of Ayurved, Jaipur.
 - IPGT&RA, Gujrat Ayurved University, Jamnagar.
 - Faculty of Ayurved, BHU, Varanasi.
 - Rashtriya Ayurveda Vidyapeetha, New Delhi.
 - Drug and Cosmetic Act.
8. Introduction to national & international popular journals of Ayurveda.
9. Introduction to activities of WHO in the promotion of Ayurved.

Reference Books:-

A). Padartha Vigyan:-

- | | |
|---|--------------------------------|
| 1. Padarthavigyan | Acharya Ramraksha Pathak |
| 2. Ayurvediya Padartha Vigyana | Vaidya Ranjit Rai Desai |
| 3. Ayurved Darshana | Acharya Rajkumar Jain |
| 4. Padartha Vigyana | Kashikar |
| 5. Padartha Vigyana | Balwant Shastri |
| 6. Sankhyatantwa Kaumadi | GajananS hastri |
| 7. Psycho Pathology in Indian Medicine | Dr. S.P. Gupta |
| 8. Charak Evum Sushrut ke
Darshanik Vishay ka Adhyayan | Prof. Jyotirmitra Acharya |
| 9. Ayurvediya Padartha Vigyana | Dr. Ayodhya Prasad Achal |
| 10. Padartha Vigyana | Dr. Vidyadhar Shukla. |
| 11. Padartha Vigyana | Dr. Ravidutta Tripathi |
| 12. Ayurvediya Padartha Vigyana | Vaidya Ramkrishna Sharma Dhand |
| 13. Ayurvediya Padartha Vigyan Parichaya | Vaidya Banwarilal Gaur |
| 14. Ayurvediya Padartha Darshan | Pandit Shivhare |
| 15. Scientific Exposition of Ayurveda | Dr. Sudhir Kumar |
| 16. Relevant portions of Charakasamhita, Sushrutasamhita. | |

B) History of Ayurveda:-

- | | |
|---|-------------------------------|
| 1. Upodghata of Kashyapasamhita
Paragraph of acceptance of Indian medicine | Rajguru Hem Raj Sharma |
| 2. Upodghata of Rasa Yogasagar | Vaidy Hariprapanna Sharma |
| 3. Ayurveda Ka Itihas | KaviraSuram Chand |
| 4. Ayurveda Sutra | Rajvaidya Ram Prasad Sharma |
| 5. History of Indian Medicine (1-3 part) | Dr. GirindrNath Mukhopadhyaya |
| 6. A Short history of Aryan Medical Science | Bhagwat Singh |
| 7. History of Indian Medicine | J. Jolly |
| 8. Hindu Medicine | Zimer |
| 9. Classical Doctrine of Indian Medicine | Filiyosa |
| 10. Indian Medicine in the classical age | AcharyaPriyavrata Sharma |
| 11. Indian Medicine (Osteology) | Dr. Harnley |
| 12. Ancient Indian Medicine | Dr. P. Kutumbia |
| 13. Madhava Nidan and its Chief
Commentaries (Chapters highlighting history) | Dr. G.J. Mulenbelt |
| 14. Ayurveda Ka BrihatItihasa | Vaidya Atridev Vidyalankara |
| 15. Ayurveda Ka VaigyanikaItihasa | Acharya Priyavrata Sharma |
| 16. Ayurveda Ka PramanikaItihasa | Prof. Bhagwat Ram Gupta |
| 17. History of Medicine in India | Acharya Priyavrata Sharma |
| 18. Vedomein Ayurveda | Vaidya Ram GopalS hastri |
| 19. Vedomein Ayurveda | Dr. Kapil Dev Dwivedi |
| 20. Science and Philosophy of Indian Medicine | Dr. K.N. Udupa |
| 21. History of Indian Medicine from
Pre-Mauryan to Kushana Period | Dr. Jyotirmitra |
| 22. An Appraisal of Ayurvedic Material in
Buddhist literature | Dr. Jyotirmitra |
| 23. Mahayana Granthon mein nihita
Ayurvediya Samagri | Dr. RavindraNathTripathi |

24. Jain Ayurveda Sahitya Ka Itihasa
25. Ayurveda- Prabhashaka Jainacharya
26. CharakaChintana
27. Vagbhata Vivechana
28. Atharvaveda and Ayurveda
29. Ayurvedic Medicine Past and Present
30. Ancient Scientist
31. Luminaries of Indian Medicine
32. Ayurveda Ke Itihasa Ka Parichaya
33. Ayurveda Ke Pranacharya
34. Ayurveda Itihasa Parichaya

Dr. Rajendra Prakash Bhatnagar
Acharya Raj Kumar Jain
Acharya Priyavrata Sharma
Acharya Priyavrata Sharma
Dr. Karambelkara
Pt. Shiv Sharma
Dr. O.P. Jaggi
Dr. K.R. Shrikanta Murthy
Dr. RaviduttaTripathi
Ratnakara Shastri
Prof. Banwari Lal Gaur

PART- B**50 marks****भाषाध्ययनम्**

- 1.) आयुर्वेदार्पणन्थाध्ययनक्रमः:-Stepwise method of study of Ayurveda Arsha Granthas (Sushruta Samhita, Shareera Sthanam, Chapter-4) 25 marks
 - 2.) वैद्यकीय-सुभाषितसाहित्यम् (अध्यायाः 1-10) 15 marks
 - 3.) पञ्चतन्त्रम्-अपरीक्षितकारकम् (क्षपणक कथातः मुख्यपण्डितकथापर्यन्तम् पञ्चकथाः) 10 marks
-

REFERENCE BOOKS-

- 1.) Sushruta Samhita, Shareera Sthanam, Chapter-4
- 2.) Prabhashanam Work Book, Su.sam.chap.4
Published by-AYURVEDA ACADEMY@ BANGALORE;
Email-ayuacademy@gmail.com
- 3.) Vaidyakeeya Subhashita Sahityam - Dr. Bhaskara Govinda Ghanekar
- 4.) Panchatantra-(Apareekshitakaragam) -Pt. Vishnu Sharma

**1.3 KRIYA SHARIR
(PHYSIOLOGY)**

**Theory – Two Papers-200 Marks (100 marks each)
Teaching hours-180 hours**

**PAPER-I
PART-A**

**100 Marks
50 Marks**

1. Conceptual study of fundamental principles of Ayurvediya Kriya Sharir e.g - Panchamahabhuta, Tridosha, Triguna, Loka-Purusha Samya, Samanya-Vishesha. Description of basics of Srotas.
2. Definition and synonyms of the term Sharir, definition and synonyms of term Kriya, description of Sharir Dosha and Manasa Dosha. Mutual relationship between Triguna-Tridosha & Panchmahabhuta. Difference between Shaarir and Sharir. Description of the components of Purusha and classification of Purusha, role of Shatdhatupurusha in Kriya Sharira and Chikitsa.
3. Dosha- General description of Tridosha. Inter relationship between Ritu-Dosha-Rasa-Guna. Biological rhythms of Tridosha on the basis of day-night-age-season and food intake. Role of Dosha in the formation of Prakriti of an individual and in maintaining of health. Prakrita and Vaikrita Dosha.
4. Vata Dosha: Vyutpatti (derivation), Nirukti (etymology) of the term Vata, general locations, general properties and general functions of Vata, five types of Vata (Prana, Udana, Samana, Vyana, Apana) with their specific locations, specific properties, and specific functions.
Respiratory Physiology in Ayurveda, Physiology of speech in Ayurveda.
5. Pitta Dosha: Vyutpatti, Nirukti of the term Pitta, general locations, general properties and general functions of Pitta, five types of Pitta (Pachaka, Ranjaka, Alochaka, Bhrajaka, Sadhaka) with their specific locations, specific properties, and specific functions. Similarities and differences between Agni and Pitta.
6. Kapha Dosha: Vyutpatti, Nirukti of the term Kapha, general locations, general properties and general functions of Kapha, five types of Kapha (Bodhaka, Avalambaka, Kledaka, Tarpaka, Śleshaka) with their specific locations, specific properties, and specific functions
7. Etiological factors responsible for Dosha Vriddhi, Dosha Kshaya and their manifestations.
8. Concept of Kriyakala.
9. Prakriti:
Deha- Prakriti: Vyutpatti, Nirukti, various definitions and synonyms for the term 'Prakriti'. Intra-uterine and extra-uterine factors influencing Deha-Prakriti, classification and characteristic features of each kind of Deha-Prakriti.
Manasa- Prakriti: Introduction and types of Manasa- Prakriti.
10. Ahara: Definition, classification and significance of Ahara, Ahara-vidhi-vidhana, Ashta Aharavidhi Viseshayatana, Ahara Parinamkar Bhava
11. Aharapaka (Process of digestion): Description of Annavaaha Srotas and their Mula. Role of Grahani & Pittadhara Kala.
12. Description of Avasthapaka (Madhura, Amla and Katu). Description of Nishthapaka (Vipaka) and its classification. Separation of Sara and Kitta. Absorption of Sara. Genesis of Vata-Pitta-Kapha during Aharapaka process. Definition of the term Koshtha. Classification of Koshtha and the characteristics of each type of Koshtha.
13. Agni – Definition and importance, synonyms, classification, location, properties and functions of Agni and functions of Jatharagni, Bhutagni, and Dhatvagni.

Modern Physiology

1. Definition and mechanisms of maintenance of homeostasis. Cell physiology. Membrane physiology. Transportation of various substances across cell membrane.
2. Resting membrane potential and action potential.
3. Physiology of respiratory system: functional anatomy of respiratory system. Definition of ventilation, mechanism of respiration, exchange and transport of gases, neural and chemical control of respiration, artificial respiration, asphyxia, hypoxia. Introduction to Pulmonary Function Tests.
4. Physiology of Nervous System: General introduction to nervous system, neurons, mechanism of propagation of nerve impulse, physiology of CNS, PNS, ANS; physiology of sensory and motor nervous system, Functions of different parts of brain and physiology of special senses, intelligence, memory, learning and motivation. Physiology of sleep and dreams, EEG. Physiology of speech and articulation. Physiology of temperature regulation.
5. Functional anatomy of gastro-intestinal tract, mechanism of secretion and composition of different digestive juices. Functions of salivary glands, stomach, liver, pancreas, small intestine and large intestine in the process of digestion and absorption. Movements of the gut (deglutition, peristalsis, defecation) and their control. Enteric nervous system.
6. Acid-base balance, water and electrolyte balance. Study of basic components of food. Digestion and metabolism of proteins, fats and carbohydrates. Vitamins & Minerals-sources, daily requirement, functions, manifestations of hypo and hypervitaminosis

1. Dhatu:

Etymology, derivation, definition, general introduction of term Dhatu, different theories related to Dhatuposhana (Dhatuposhana Nyaya)

2. Rasa Dhatu:

Etymology, derivation, location, properties, functions and Praman of Rasa-dhatu. Physiology of Rasavaha Srotas, Formation of Rasa Dhatu from Aahara Rasa, circulation of Rasa (Rasa-Samvahana), role of Vyana Vayu and Samana Vayu in Rasa Samvahana. Description of functioning of Hridaya. Ashtavidha Sara (8 types of Sara), characteristics of Tvakasara Purusha, conceptual study of mutual interdependence (Aashraya-Aashrayi Bhaava) and its relation to Rasa and Kapha. Manifestations of kshaya and Vriddhi of Rasa.

3. Rakta Dhatu:

Etymology, derivation, synonyms, location, properties, functions and Praman of Rakta Dhatu. Panchabhautikatva of Rakta Dhatu, physiology of Raktavaha Srotas, formation of Raktadhatu, Ranjana of Rasa by Ranjaka Pitta, features of Shuddha Rakta, specific functions of Rakta, characteristics of Raktasara Purusha, manifestations of Kshaya and Vriddhi of Raktadhatu, mutual interdependence of Rakta and Pitta.

4. Mamsa Dhatu :

Etymology, derivation, synonyms, location, properties and functions of Mamsa Dhatu, physiology of Mamsavaha Srotasa, formation of Mamsa Dhatu, characteristics of Mamsasara Purusha, manifestations of Kshaya and Vriddhi of Mamsa Dhatu .Concept of Peshi.

5. Meda Dhatu :

Etymology, derivation, location, properties, functions and Praman of Meda Dhatu, physiology of Medovaha Srotas, formation of Medo Dhatu, characteristics of Medasara Purusha and manifestations of Kshaya and Vriddhi of Meda.

6. Asthi Dhatu:

Etymology, derivation, synonyms, location, properties, functions of Asthi Dhatu. Number of Asthi. Physiology of Asthivaha Srotas and formation of Asthi Dhatu, characteristics of Asthisara Purusha, mutual interdependence of Vata and Asthi Dhatu, manifestations of Kshaya and Vriddhi of Asthi Dhatu.

7. Majja Dhatu :

Etymology, derivation, types, location, properties, functions and Praman of Majjaa Dhatu, physiology of Majjavaha Srotas, formation of Majja Dhatu, characteristics of Majja Sara Purusha, relation of Kapha, Pitta, Rakta and Majja, manifestations of Kshaya and Vriddhi of Majja Dhatu.

8. Shukra Dhatu:

Etymology, derivation, location, properties, functions and Praman of Shukra Dhatu, physiology of Shukraravaha Srotas and formation of Shukra Dhatu. Features of Shuddha Shukra, characteristics of Shukra-Sara Purusha, manifestations of Kshaya and Vriddhi of Shukra Dhatu.

9. Concept of **Ashraya-Ashrayi** bhava i.e. inter-relationship among Dosha, Dhatu Mala and Srotas.
10. **Ojas**: Etymological derivation, definition, formation, location, properties, Praman, classification and functions of Ojas. Description of Vyadhikshamatva. Bala Vriddhikara Bhava. Classification of Bala. Etiological factors and manifestations of Ojavisramsas, Vyapat and Kshaya.
11. **Upadhatu**: General introduction, etymological derivation and definition of the term Upadhatu. Formation, nourishment, properties, location and functions of each Upadhatu.
 - a. Stanya: Characteristic features and methods of assessing Shuddha and Dushita Stanya manifestations of Vriddhi and Kshaya of Stanya.
 - b. Artava: Characteristic features of Shuddha and Dushita Artava. Differences between Raja and Artava, Physiology of Artavavaha Srotas
 - c. Tvak: Classification thickness of each layer and functions.
12. **Mala**: Etymological derivation and definition of the term Mala. Aharamala: Enumeration and description of the process of formation of Aharamala.
 - a. Purisha: Etymological derivation, definition, formation, properties, quantity and functions of Purisha. Physiology of Purishavaha Srotas, manifestations of Vriddhi and Kshaya of Purisha.
 - b. Mutra: Etymological derivation, definition, formation, properties, quantity and functions of Mutra. Physiology of Mutravaha Srotas, physiology of urine formation in Ayurveda, manifestations of Vriddhi and Kshaya of Mutra.
 - c. Sveda: Etymological derivation, definition, formation and functions of Sveda. Manifestations of Vriddhi and Kshaya of Sveda. Description of Svedvaha Srotas
 - d. Dhatumala: Brief description of each type of Dhatumala.
13. **Panchagyanendriya**: Physiological description of Panchagyaanendriya and physiology of perception of Shabda, Sparsha, Rupa, Rasa and Gandha. Physiological description of Karmendriya.
14. **Manas**: Etymological derivation, definition, synonyms, location, properties, functions and objects of Manas. Physiology of Manovaha Srotas.
15. **Atma**: Etymological derivation, definition, properties of Atma. Difference between Paramatma and Jivatma; Characteristic features of existence of Atma in living body.
16. **Nidra**: Nidrotpatti, types of Nidra, physiological and clinical significance of Nidra; Svapnotpatti and types of Svapna.

PART B**50 Marks****Modern Physiology**

1. Haemopoetic system – composition, functions of blood and blood cells, Haemopoiesis (stages and development of RBCs, and WBCs and platelets), composition and functions of bone marrow, structure, types and functions of Haemoglobin, mechanism of blood clotting, anticoagulants, physiological basis of blood groups, plasma proteins, introduction to anaemia and jaundice.
2. Immunity ,classification of immunity : Innate, acquired and artificial. Different mechanisms involved in immunity: Humoral (B-cell mediated) and T-Cell mediated immunity. Hypersensitivity.
3. Muscle physiology – comparison of physiology of skeletal muscles, cardiac muscles and smooth muscles. Physiology of muscle contraction.
4. Physiology of cardio-vascular system: Functional anatomy of cardiovascular system. Cardiac cycle. Heart sounds. Regulation of cardiac output and venous return. Physiological basis of ECG. Heart-rate and its regulation. Arterial pulse. Systemic arterial blood pressure and its control.
5. Adipose tissue, lipoproteins like VLDL, LDL and HDL triglycerides.
6. Functions of skin, sweat glands and sebaceous glands.
7. Physiology of male and female reproductive systems. Description of ovulation, spermatogenesis, oogenesis, menstrual cycle.
8. Physiology of Excretion – functional anatomy of urinary tract, functions of kidney. Mechanism of formation of urine, control of micturition. Formation of faeces and mechanism of defecation.
9. Endocrine glands – General introduction to endocrine system, classification and characteristics of hormones, physiology of all endocrine glands, their functions and their effects.

PRACTICAL**100 Marks
Teaching hours-180****Ayurvedic practical**

1. Assessment of Prakriti
2. Assessment of Dosha (Features of Vriddhi- Kshaya)
3. Assessment of Dhatu (Features of Vriddhi- Kshaya)
4. Assessment of Agni
5. Assessment of Koshtha
6. Assessment of Sara
7. Nadi pariksha

Modern physiology practical

1. Introduction to laboratory instruments- Simple & Compound Microscope, Scalp vein set, bulbs for blood collection, Sahli's Haemometer, Haemocytometer, pipettes, Urinometer, Albuminometer, Stethoscope, B.P. Apparatus, Harpenden's caliper, Clinical Hammer, Tuning Fork, Stop Watch, Thermometer, Centrifuge machine, ECG Machine
2. Collection of blood sample – prick, vene-puncture method, use of anticoagulants
3. Preparation of blood smear and staining
4. Estimation of Hemoglobin
5. Microscopic examination of blood
 - a.Total RBC count
 - b.Total WBC count
 - c.Differential leucocyte count
6. Packed cell volume (PCV) demonstration
7. ESR demonstration
8. Bleeding time, Clotting time
9. Blood grouping and Rh typing
10. Examination of Cardio-Vascular system
 1. Pulse examination
 2. Arterial blood pressure measurement
 3. Examination of heart sounds
 4. ECG demonstration
11. Examination of Respiratory system
 - a. Respiratory rate
 - b. Breath sounds
 - c. Spirometry
12. Examination of Nervous System- Sensory & Motor.
13. Urine examination –Physical examination, chemical examination. Test for normal constituents of urine. Detection of specific gravity and reaction of urine.

Distribution of Practical marks

• Laboratory Practical	- 20
• Human Experiment	- 15
• Spotting	- 15
• Prakriti Saradi pariksha	- 20
• Practical Record	- 10
• Viva- voce	- 20

REFERENCE BOOKS:-

- Ayurvediya Kriyasharir - Ranjit Rai Desai
- Kayachikitsa Parichaya - C. Dwarkanath
- Prakrit Agni Vigyan - C. Dwarkanath
- Sharir Kriya Vigyan - Shiv Charan Dhyani
- Abhinava Sharir Kriya Vigyana - Acharya Priyavrata Sharma
- Dosha Dhatu Mala Vigyana - Shankar Gangadhar Vaidya
- Prakrita Dosha Vigyana - Acharya Niranjana Dev

- Tridosha Vigyana - Shri Upendranath Das
- Sharira Tatva Darshana - Hirlekar Shastri
- Prakrita Agni Vigyana - Niranjana Dev
- Deha Dhatvagni Vigyana - Vd. Pt. Haridatt Shastri
- Sharir Kriya Vigyana (Part 1-2) - Acharya Purnchandra Jain
- Sharir Kriya Vigyana - Shri Moreshwar Dutt. Vd.
- Sharira Kriya Vijnana (Part 1 and 2) – Nandini Dhargalkar
- Dosha Dhatu Mala Vigyana - Basant Kumar Shrimal
- Abhinava Sharir Kriya Vigyana - Dr. Shiv Kumar Gaur
- Pragyogik Kriya Sharir - Acharya P.C. Jain
- Kaya Chikitsa Parichaya - Dr. C. Dwarkanath
- Concept of Agni - Vd. Bhagwan Das
- Purush Vichaya - Acharya V.J. Thakar
- Kriya Sharir - Prof. Yogesh Chandra Mishra
- Sharir Kriya Vigyana - Prof. Jayaram Yadav & Dr. Sunil Verma.
- Basic Principles of Kriya-Sharir (A treatise on Ayurvedic Physiology) by Dr. Srikant Kumar Panda
- Sharir Kriya – Part I & Part II – Dr. Ranade, Dr. Deshpande & Dr. Chobhe
- Human Physiology in Ayurveda - Dr Kishor Patwardhan
- Sharirkriya Vignyan Practical Hand Book– Dr.Ranade, Dr.Chobhe, Dr. Deshpande
- Sharir Kriya Part 1 – Dr.R.R.Deshapande, Dr.Wavhal
- Sharir Kriya Part 2 – Dr. R.R.Deshapande, Dr.Wavhal
- Ayurveda Kriya Sharira- Yogesh Chandra Mishra
- Textbook of Physiology - Gyton & Hall
- A Textbook of Human Physiology – A.K.Jain
- Essentials of Medical Physiology - Sembulingam, K.
- Concise Medical Physiology - Chaudhari, Sujit K.
- Principals of Anatomy & Physiology - Tortora & Grabowski
- Textbook of Medical Physiology- Indu Khurana

1.4 RACHNA SHARIR (ANATOMY)

**Theory-Two Papers-200 Marks-(100 marks each)
Teaching Hours-180 hours**

**PAPER-I
PART-A**

**100 Marks
50 Marks**

1. Shariopkramaniya Shaarira

Sharira and shaarira vyakhya (definitions of sharira and shaarira), shadangatvam (six regions of the body), anga pratyanga vibhaga (sub divisions). Mrita sharir samshodhan. Shaarira shastra vibhaga, shaarira gyan prayojana . Constitution of purusha according to dhatubheda, panchabhautikatvam, trigunatmakatvam, tridoshamayatvam, karma purusha, and doshadhatumala-mulakatvam.

2. Paribhasha Shaarira

Kurcha, kandara, jala, asthisanghat, seemanta, seevani, rajju, snayu and lasika.

3. Garbha Shaarira

Garbha definitions, explanation of shukra, artava, garbhadhana. Role of tridosha and panchmahabhuta in the fetal development. Beeja, beejabhaga and beejabhagavayava, linga vinischaya, masanumasika garbha vriddhi-krama, garbhottpadakbhava, garbhavridhdhikara bhava, garbha poshana, apara nirmana , nabhinadi nirmana. Aanga pratyanga utpatti.

4. Pramana Shaarira: Anguli pramana.

5. Asthi Shaarira

Asthi vyakhya, number, types, asthi swaroompa, vasa, meda and majja.

6. Sandhi Shaarira

Sandhi vyakhya, numbers, types of asthi sandhi.

7. Sira, Dhamani, Srotas Shaarira

1. Definition, types and number of sira and dhamani.
2. Description of Hridaya.
3. Sroto shaarira: Definition, types of srotas and srotomula.

8. Peshi Shaarira

1. Peshi vyakhya, structure, types, number and importance.
2. Description of Peshi.

9. Koshtha Evam Ashaya Shaarira

3. Definition of koshta and number of koshtanga.
4. Types and description of ashaya.

10. Kala Shaarira

Kala: definition and types.

11. Uttamangiya Shaarira

Shatchakra, ida, pingala and sushumna nadi - brief description.

12. Marma Shaarira

Marma: definition, number, location, classification, clinical importance with viddha lakshana. Explanation of trimarmas. Detail description of marmas.

13. Indriya Shaarira

Definition of indriya, indriya artha and indriya adhisthan, their number and importance. Description of gyanendria, karmendriya and ubhayendriya (manas).

PART-B

50 marks

1. Definition and branches of anatomy. Preservation methods of the cadaver.

2. Anatomical Terminologies

Anatomical position, Planes, and explanation of anatomical terms related to skin, fasciae, bones, joints and their movements, muscles, ligaments, tendons, blood vessels, nerves,.

3. Embryology

Definitions and branches of embryology. Embryo and fetus. Sperm and ovum, fertilization. Cleavage. Germ layers formation and their derivatives. Laws of heredity, Sex determination and differentiation, Month-wise development of embryo. Foetal circulation, placenta formation, Umbilical cord formation.

4. Osteology

Bone: Definition, ossification, structure and types. Description of bones with clinical anatomy.

5. Arthrology

Joints: Definition, structure types and movements. Description of joints of extremities, vertebral joints and temporomandibular joint with their clinical anatomy.

6. Cardiovascular system

1. Definition, types and structure of arteries and veins.
2. Description of heart and blood vessels with their course and branches.
3. Pericardium with applied aspect.

7. Lymphatic system

Definition, types and structure of lymph vessels, lymph glands with their clinical aspect.

8. Myology

- a) Structure and types of muscles.
- b) Description of muscles; their origin, insertion, actions, nerve supply and clinical anatomy.

1. Respiratory System

1. Bronchial tree and lungs with their clinical aspects.
2. Respiratory tract: nasal cavity, pharynx, larynx, trachea, bronchial tree.
3. Pleura with its clinical aspects.
4. Diaphragm.

2. Digestive system

1. Organs of digestive tract (alimentary tract) with their clinical aspects.
2. Digestive glands: liver, spleen and pancreas.
3. Description of peritoneum with its clinical aspects.

3. Urinary System

Urinary tract: kidney, ureter, urinary bladder and urethra with their clinical aspects.

4. Reproductive system

- a. Male Reproductive system: reproductive organs, tract and glands (prostate and seminal vesicles) with their clinical aspects.
- b. Female reproductive system: reproductive organs, tract and glands with their clinical aspects.

5. Endocrinology

Definition, classification & description of endocrine glands (pituitary, thyroid, parathyroid, thymus and suprarenal glands) with clinical aspects.

PART B**50 Marks****6. Nervous System**

Nervous system: definition, classification and its importance. Description of brain and spinal cord.

Description of peripheral nervous system: cranial and spinal nerves, nerve plexuses, and autonomic nervous system, formation and circulation of cerebrospinal fluid and blood supply of brain and spinal cord.

7. Sensory organs

Description of structures of eye, ear, nose, tongue and skin with their clinical aspects.

8. Surface and radiological anatomy

- Study of radio-imaging of limbs, abdomen, pelvis and vertebral column with its clinical application.
- Surface anatomy of thoracic and abdominal viscera.

PRACTICAL**100 Marks****Teaching hours :180****Content of Practical**

- Practical study of bones
- Practical study of organs
- Practical study of surface and radiological anatomy.
- Shava vichhedana – detailed dissection of the whole body.
- Practical study of location of marma
- Demonstration of histology slides (10 slides)

Distribution of marks

1. Spotting -	20 marks
2. Dissected organs and histology slides	20 Marks
3. Bones, joints, marma	20 Marks
4. Surface & radiological anatomy	10 Marks
5. Practical records	10 Marks
6. Viva-Voce	20 Marks
Total	100 Marks

Reference Books:-

S. No.	Name of Book	Author
1	Brihat Shariram Vaidyaratna-	P.S. Varrier
2	Abhinava Shariram-	Acharya Damodar Sharma Gaur
3	Manava Sharir (Revised Edition)-	Prof. Dinkar Govind Thatte
4	Manava Bhruna Vigyana -	Prof. Dinkar Govind Thatte
5	Manava Anga Rekhankan Vikrian -	Prof. Dinkar Govind Thatte
6	Sharir Rachana Vigyan (English)-	Vaidya P.G. Athawale
7	Manual of Practical Anatomy Cunnigham Practical Manual Vol-1, Vol-2, Vol-3	
8	Clinical Anatomy in Ayurveda -	Prof. D.G. Thatte & Prof. Suresh Chandra
9	Sharir Rachna Vigyan (English)-	Prof. D.G. Thatte
10	Ayurvedic Human Anatomy -	Prof. Dr. Giridhar M. Kanthi
11	Regional Anatomy -	B. D. Chaurasia
12	Rachana Sharir Vigyana -	Dr. Mahendra Sing
13	relevant chapters of Brihtrayee and Laghuthrayee	
14	Gray's Anatomy	
15	Text Book of Human Anatomy-	Inderbir Singh
16	Clinical Anatomy-	Richard S Snell
17	Fundamentals of Human Anatomoy-	Dr. Chakraborty
18	Human Osteology -	Poddar

1.5 Maulik Siddhant avum Ashtang Hridaya
(Basic Principles and Ashtang Hridaya- An ancient text of Ayurveda)

Theory- One Paper- 100 marks
Teaching Hours -120 hours

Part A

60 marks

Ashtang Hridaya Sutrasthana Adhyaya 1 to 15

Part B

40 Marks

1. Ashtang Hridaya Sutrasthana Adhyaya 16 to 30
2. Description of Ashta Prakriti
3. Shastra Lakshan (Tantra), Tantraguna, Tantradasha, Tachitalya, Arthasraya, Kalpana
4. Practical Application of Tridosha and Pancha mahabutha n reference to Desha, Kaala, Prakrithi, Rtu and its Significance.

Reference Books:

1. Astang Hridaya : Hindi commentary by Lalchanda Vaidya
2. Astang Hridaya : Hindi commentary by Vd. B.L. Gaur
3. Astang Hridaya : English commentary by Dr. T. Sreekumar
4. Astang Hridaya : English commentary by Dr. Vishwavasudhar Gaur
5. Astang Hridaya : Sanskrit commentary by Hemadri
6. Astang Hridaya : Sanskrit commentary by Arunadatta

1.1 **PADARTHA VIGYAN EVUM AYURVEDA ITIHAS**
(Philosophy and History of Ayurveda)

Theory- Two papers- 200 marks (100 each paper)
Total teaching hours: 150 hours
Padartha Vigyanam 100 marks

PAPER-I

PART A

50 marks

1. Ayurveda Nirupana

- 1.1 Lakshana of Ayu, composition of Ayu.
- 1.2 Lakshana of Ayurveda.
- 1.3 Lakshana and classification of Siddhanta.
- 1.4 Introduction to basic principles of Ayurveda and their significance.

2. Ayurveda Darshana Nirupana

- 2.1 Philosophical background of fundamentals of Ayurveda.
- 2.2 Etymological derivation of the word "Darshana". Classification and general introduction to schools of Indian Philosophy with an emphasis on: Nyaya, Vaisheshika, Sankhya and Yoga.
- 2.3 Ayurveda as unique and independent school of thought (philosophical individuality of Ayurveda).
- 2.4 Padartha: Lakshana, enumeration and classification, Bhava and Abhavapadartha, Padartha according to Charaka (Karana-Padartha).

3. Dravya Vigyanam

- 3.1 **Dravya:** Lakshana, classification and enumeration.
- 3.2 **Panchabhuta:** Various theories regarding the creation (theories of Taittiriyaopanisad, Nyaya-Vaisheshika, Sankhya-Yoga, Sankaracharya, Charaka and Susruta), Lakshana and qualities of each Bhoota.
- 3.3 **Kaala:** Etymological derivation, Lakshana and division / units, significance in Ayurveda.
- 3.4 **Dik:** Lakshana and division, significance in Ayurveda.
- 3.5 **Atma:** Lakshana, classification, seat, Gunas, Linga according to Charaka, the method / process of knowledge formation (*atmanahjnyaspravrittih*).
- 3.6 **Purusha:** as mentioned in Ayurveda - Ativahikapurusha/ Sukshmarsharira/ Rashipurusha/ Chikitsapurusha/ Karmapurusha/ Shaddhatvatmakapurusha.
- 3.7 **Manas:** Lakshana, synonyms, qualities, objects, functions, dual nature of mind (*ubhayaatmakatvam*), as a substratum of diseases, penta-elemental nature (*panchabhutatmakatvam*).
- 3.8 Role of Panchamahabhuta and Triguna in Dehaprakriti and Manasaprakriti respectively.
- 3.9 Tamas as the tenth Dravya.
- 3.10 Practical study/application in Ayurveda.

PART B

50 marks

4. Gunavigyaniyam

- 4.1 Etymological derivation, classification and enumeration according to Nyaya-Vaisheshika and Charaka, Artha, Gurvadiguna, Paradiguna, Adhyatmaguna.
- 4.2 Lakshana and classification of all the 41 gunas.
- 4.3 Practical / clinical application in Ayurveda.

5. Karma Vigyaniyam

- 5.1 Lakshana, classification in Nyaya.
- 5.2 Description according to Ayurveda.
- 5.3 Practical study/ application in Ayurveda.

6. SamanyaVigyaniyam

- 6.1 Lakshana, classification.
- 6.2 Practical study/ application with reference to Dravya, Guna and Karma.

7. VisheshaVigyaniyam

- 7.1 Lakshana, classification.
- 7.2 Practical study/ application with reference to Dravya, Guna and Karma.
- 7.3 Significance of the statement "*Pravrittirubhayasyatu*".

8. SamavayaVigyaniyam

- 8.1 Lakshana
- 8.2 Practical study /clinical application in Ayurveda.

9. AbhavaVigyaniyam

- 9.1 Lakshana, classification
- 9.2 Clinical significances in Ayurveda.

PadarthaVigyan and Ayurveda Itihas

PAPER II

PART A - Pramana/ Pariksha- Vigyaniam

100 marks

75 marks

1. Pariksha

- 1.1. Definition, significance, necessity and use of *Pariksha*.
- 1.2. Definition of *Prama*, *Prameya*, *Pramata*, *Pramana*.
- 1.3. Significance and importance of *Pramana*, Enumeration of *Pramana* according to different schools of philosophy.
- 1.4. Four types of methods for examination in *Ayurveda* (Chaturvidha-Parikshavidhi), *Pramana* in *Ayurveda*.
- 1.5. Subsudation of different *Pramanas* under three *Pramanas*.
- 1.6. Practical application of methods of examination (Parikshavidhi) in treatment (Chikitsa).

2. AptopdeshaPariksha/ Pramana

- 2.1. Lakshana of Aptopadesha, Lakshana of Apta.
- 2.2. Lakshana of Shabda, and its types.
- 2.3. Shabdavritti-Abhidha, Lakshana, Vyanjana and Tatparyakhya. Shaktigrahahetu.
- 2.4. Vaakya: Characteristics, Vaakyarthagyanahetu- Aakanksha, Yogyata, Sannidhi.

3. PratyakshaPariksha/ Pramana

- 3.1. Lakshana of Pratyaksha, types of Pratyaksha- Nirvikalpaka- Savikalpaka with description, description of Laukika and Alaukika types and their further classification.
- 3.2. Indriya-prapyakaritvam, six types of Sannikarsha.
- 3.3. Indriyanamlakshanam, classification and enumeration of Indriya. Description of Panchapanchaka, Penta-elemental nature of Indriya by Panchamahabhuta (*Panchabhautikatwa* of Indriya) and similarity in sources (*Tulyayonitva*) of Indriya.
- 3.4. Trayodasha Karana, dominance of Antahkaran.
- 3.5. Hindrances in direct perception (*pratyaksha-anupalabdihikaran*), enhancement of direct perception (Pratyaksha) by various instruments/ equipments, necessity of other *Pramanas* in addition to Pratyaksha.
- 3.6. Practical study/ application of Pratyaksha in physiological, diagnostic, therapeutics and research grounds.

4. Anumanapariksha/Pramana

- 4.1. Lakshana of Anumana. Introduction of Anumiti, Paramarsha, Vyapti, Hetu, Sadhya, Paksha, Drishtanta. Types of Anumana mentioned by Charaka and Nyayadarshana.
- 4.2. Characteristic and types of Vyapti.
- 4.3. Lakshana and types of Hetu, description of Ahetu and Hetwabhasa.
- 4.4. Characteristic and significance of Tarka.
- 4.5. Practical study/ application of Anumanapramana in physiological, diagnostic, therapeutics and research.

5. Yuktipariksha/ Pramana

- 5.1. Lakshana and discussion.
- 5.2. Importance in *Ayurveda*.
- 5.3. Practical study and utility in therapeutics and research.

6. UpamanaPramana

- 6.1 Lakshana.
- 6.2 Application in therapeutics and research.

7. Karya- Karana Siddhanta (Cause and Effect Theory)

- 7.1. Lakshana of Karya and Karana. Types of Karana.
- 7.2. Significance of Karya and Karana in Ayurveda.
- 7.3. Different opinions regarding the manifestation of Karya from Karana: Satkaryavada, Asatkaryavada, Parinamavada, Arambhavada, Paramanuvada, Vivartavada, Kshanabhangurvada, Swabhavavada, Pilupaka, Pitharpaka, Anekantavada, Swabhavoparamavada.

PART B

Ayurved Itihas

25 marks

1. Etymological derivation (Vyutpatti), syntactical derivation (Niruktti) and definition of the word Itihas, necessity of knowledge of history, its significance and utility, means and method of history, historical person (Vyakti), subject (Vishaya), time period (Kaal), happening (Ghatana) and their impact on Ayurveda.
2. Introduction to the authors of classical texts during Samhitakaal and their contribution: Atreya, Dhanwantari, Kashyapa, Agnivesha, Sushruta, Bhela, Harita, Charaka, Dridhabala, Vagbhata, Nagarjuna, Jivaka.
3. Introduction to the commentators of classical Samhitas – Bhattaraharicchandra, Jejjata, Chakrapani, Dalhana, Nishchalakara, Vijayarakshita, Gayadas, Arunadutta, Hemadri, Gangadhara, YogindranathSen, Haranachandra, Indu.
4. Introduction to the authors of compendiums(Granthasamgrahakaala) – Bhavmishra, Sharngadhara, Vrinda, Madhavakara, Shodhala, Govinda Das (Author of Bhaishajyaratnawali), Basavraja.
5. Introduction to the authors of Modern era –Gana NathSen, YaminiBhushan Rai, Shankar Dajishastri Pade, Swami Lakshmiram, Yadavji Tikramji, Dr. P. M. Mehta, Ghanekar, Damodar Sharma Gaur, Priyavrat Sharma.
6. Globalization of Ayurveda – Expansion of Ayurveda in Misra (Egypt), Sri Lanka, Nepal other nations.
7.
 - a) Developmental activities in Ayurveda in the post-independence period, development in educational trends.
 - b) Establishment of different committees, their recommendations.
 - c) Introduction to and activities of the following Organizations :- Department of AYUSH, Central Council of Indian Medicine, Central Council for Research in Ayurvedic Sciences, Ayurvedic Pharmacopeia commission, National Medicinal Plants Board, Traditional Knowledge Digital Library (TKDL)
 - d) Introduction to the following National Institutions :
 - National Institute of Ayurved, Jaipur.
 - IPGT&RA, Gujrat Ayurved University, Jamnagar.
 - Faculty of Ayurved, BHU, Varanasi.
 - Rashtriya Ayurveda Vidyapeetha, New Delhi.
 - Drug and Cosmetic Act.
8. Introduction to national & international popular journals of Ayurveda.
9. Introduction to activities of WHO in the promotion of Ayurved.

Reference Books:-

A) PadarthaVigyan:-

1. Padarthavigyan AcharyaRamrakshaPathak
2. AyurvediyaPadartha Vigyana VaidyaRanjitRai Desai
3. AyurvedDarshana AcharyaRajkumar Jain
4. PadarthaVigyana Kashikar
5. PadarthaVigyana BalwantShastri
6. SankhyatantwaKaumadi GajananShastri
7. Psycho Pathology in Indian Medicine Dr. S.P. Gupta
8. CharakEvumSushrutke Prof. JyotirmitraAcharya
Darshanik Vishay kaAdhyayan
9. AyurvediyaPadarthaVigyana Dr. Ayodhya Prasad Achal
10. PadarthaVigyana Dr. VidyadharShukla
11. PadarthaVigyana Dr. RaviduttaTripathi
12. AyurvediyaPadarthaVigyana VaidyaRamkrishna Sharma
Dhand
13. AyurvediyaPadarthaVigyanParichaya VaidyaBanwarilal Gaur
14. AyurvediyaPadarthaDarshan PanditShivhare
15. Scientific Exposition of Ayurveda Dr. Sudhir Kumar
16. Relevant portions of Charakasamhita, Sushrutasamhita.

B) History of Ayurveda:-

1. Upodghata of Kashyapasamhita Rajguru Hem Raj Sharma
Paragraph of acceptance of Indian medicine
2. Upodghata of Rasa Yogasagar VaidyHariprapanna Sharma
3. Ayurveda Ka Itihas KaviraSuram Chand
4. Ayurveda Sutra Rajvaidya Ram Prasad Sharma
5. History of Indian Medicine (1-3 part) Dr. GirindrNathMukhopadhyaya
6. A Short history of Aryan Medical Science Bhagwat Singh
7. History of Indian Medicine J. Jolly
8. Hindu Medicine Zimer
9. Classical Doctrine of Indian Medicine Filiyosa
10. Indian Medicine in the classical age AcharyaPriyavrata Sharma
11. Indian Medicine (Osteology) Dr. Harnley
12. Ancient Indian Medicine Dr. P. Kutumbia
13. MadhavaNidan and its Chief Dr. G.J. Mulenbelt
Commentaries (Chapters highlighting history)
14. Ayurveda KaBrihatItihasa VaidyaAtridevVidyalankara
15. Ayurveda KaVaigyanikaItihasa AcharyaPriyavrata Sharma
16. Ayurveda KaPramanikaItihasa Prof. Bhagwat Ram Gupta
17. History of Medicine in India AcharyaPriyavrata Sharma
18. Vedomein Ayurveda Vaidya Ram GopalShastri
19. Vedomein Ayurveda Dr. KapilDevDwivedi
20. Science and Philosophy of Indian Medicine Dr. K.N. Udupa
21. History of Indian Medicine from Dr. Jyotirmitra
Pre-Mauryan to Kushana Period
22. An Appraisal of Ayurvedic Material in Buddhist literature Dr. Jyotirmitra
23. Mahayana Granthonmeinnihita Dr. RavindraNathTripathi
AyurvediyaSamagri
24. Jain Ayurveda SahityaKa Itihasa Dr. Rajendra Prakash Bhatnagar
25. Ayurveda- PrabhashakaJainacharya Acharya Raj Kumar Jain

26. CharakaChintana
27. VagbhataVivechana
28. Atharvaveda and Ayurveda
29. Ayurvedic Medicine Past and Present
30. Ancient Scientist
31. Luminaries of Indian Medicine
32. Ayurveda KeItihasaKaParichaya
33. Ayurveda KePranacharya
34. Ayurveda ItihasaParichaya

AcharyaPriyavrata Sharma
AcharyaPriyavrata Sharma
Dr. Karambelkara
Pt. Shiv Sharma
Dr. O.P. Jaggi
Dr. K.R. Shrikanta Murthy
Dr. RaviduttaTripathi
RatnakaraShastri
Prof. BanwariLal Gaur

TEACHING MODULE FOR PADARTHAVIJNANA

Number of papers - 2
Total number of hours - 150
Marks 2X100 - 200

Each paper subdivided into two parts

Paper 1 part A - 50 marks
Paper 1 part - B - 50 marks
Paper 2 part A - 75 marks
Paper 2 part - B
(Ayurveda Itihasa) - 25 marks

PAPER – 1 PART A

(Number of Units – 3

Marks – 50

Hours – 38)

Unit – 1 Ayurveda Nirupana – 5 marks – 4 hrs

Sl No	Name of topic	Minimum points to cover	Hrs	Marks
1	Lakshana & composition of Ayus	Definition from Charaka (S'areerendriya...), four types of Ayus	4	5
2	Lakshana of Ayurveda	Hitahitam sukham dukham.....		
3	Lakshana and classification of Sidhanta	Charaka Vimaana 8 th Chapter Definition and types		
4	Introduction to Basic Principles of Ayurveda and their significance	Introducing tridoshasidhanta and panchabhutasidhanta		

Unit – 2 Ayurveda Darsana Nirupana & Padartha – 15 marks – 12 hrs

Sl No	Name of topic	Minimum points	Hrs	Marks
1	Philosophical background of fundamentals of ayurveda	Explain philosophy as basic sciences of that period, period of philosophy, Ayurveda adopted the principles from Philosophy. Eg: shat padartha, panchabhoota, navadravya (not dealt in detail)	1	15
2	Etymological derivation of the word Darsana	Dris, drisyate, drisyate anena		
3	Classification of darsana	Classification into vaidika/avaidika, astika/nastika basis of classification, list of each, importance of six systems	1	
4	General introductions of different schools of Indian Philosophy	Names, synonyms, propounders, main concepts of each darsana (6 vaidika + 5 aavidika)		
5	Specific introduction on nyaya-vaisheshik systems	Nyaya-vaisheshika, propounders, their mutuality, importance to pramana-prameya, navyanyaaya	3	

6	Specific introduction to Sankhya-yoga	Propounders, mutuality, satkaryavada (introduction), panchavimsatitava (introduction), yoga-definition, list of ashtangayoga and chittavritti	3	
7	Ayurveda as unique and independent school of thought (philosophical individuality of ayurveda)	Even though Ayurveda takes up principles from darsana, it has its own principles.	1	
8	Padartha - Lakshana, enumeration, classification into bhava & abhava padartha	Astitva-abhidheyatwa-jneyatwa - Pramitivishaya padartha - six categories of knowledge	3	
9	Padartha according to Charaka (Karanapadartha)	Samanyam cha ... ityuktam karanam karyam dhatusamyamiha uchyate		

Unit - 3 Dravya vijnaneeyam - 30 marks - 22 hrs

Sl No	Name of topic	Minimum points	Hrs	Mark s
1	Dravya - Lakshana, classification and enumeration	Lakshana - as per Charaka, Vaisesika Classification - Karana, karya and further subdivisions Enumeration - Navadravya	1	13
2	Panchabhuta - various theories regarding creation	Theories of taittireeya, Nyaya-vaisheshika, Sankhyayoga, Sankaracharya, Charaka & Susruta	2	
3	Lakshana and qualities of each bhuta	As per Tarkasangraha	4	
4	Kala	Etymological derivation, Lakshana, division/units, significance in Ayurveda	2	10
5	Dik	Lakshana and division, significance in Ayurveda	2	
6	Atma	Lakshana & classification (TS), Seat (Charaka), Gunas (Charaka), Atmalinga (Charaka), Jnanapravritti (charaka sareera 1)	3	
7	Purusha - as mentioned in Ayurveda	Ativahikapurusha (CS Sa 3), Sukshmasareera (Sankhya), Rasipurusha (C.S.Sa 1), Karmapurusha (Su Sa 1), Shaddhatukapurusha (CS Sa 1)	3	
8	Manas	Lakshana (CS Sa 1), Synonyms (Amara), Qualities (CS Sa1), Objects (CS Sa1), functions(CS Sa1), dual nature (Sankhya, Susruta Sa 1), substratum of disease (CS Sa 1), panchabhautikatva	3	7
9	Role of Panchamahabhuta & Triguna in dehaprakriti & Manasaprakriti repectively	Iti bhootamayo deha - explanation as per AH Sa - 1, Manasaprakriti - classification into satvika, rajasa & tamasa as per C.S Vim. 8 th Chapter	2	

10	Tamas as tenth dravya	Arguements by Meemamsa & counter arguement by Vaiseshika	1	
11	Practical study/application in Ayurveda			

PAPER - 1 PART B

(Number of units - 4 Marks - 50 Hours - 40)

Unit - 4 Gunavijnaneeya - Marks - 22 Hours - 18

Sl No	Name of topic	Minimum points	Hrs	Marks
1	Etymological derivation & Lakshana	Definition from Vaiseshika & Charaka	1	20
2	Enumeration and classification	According to Nyaya-vaiseshika & Charaka	2	
3	Artha, Adhyatma, Gurvadi, Paradi gunas	Definitions available guna from TS, description of other gunas (not available in TS) from Charakasamhita	12	
4	Practical clinical application in Ayurveda	Description regarding application of Gurvadi & Paradi guna in Ayurveda.	3	2

Unit - 5 Karmavijnaneeya - Marks - 6 Hours - 4

Sl No	Name of topic	Minimum points	Hrs	Marks
1	Lakshana	Definition from Vaiseshika & Charaka	1	6
2	Classification	According to Nyaya-vaiseshika (TS)		
3	Description according to Ayurveda	Definition, use of the term Karma in different meanings in Ayurveda	3	
4	Practical clinical application in Ayurveda			

Unit - 6 Samanya & Vishesha vijnaneeya - Marks - 12 Hours - 8

Sl No	Name of topic	Minimum points	Hrs	Marks
1	Lakshana	Definition from TS	1	12
2	Classification	As per TS (para-apara) & Chakrapani (dravya-guna karma)		
3	Practical study /application with reference to Dravya, Guna & Karma	Importance of samanya in practical aspect, description in CS (Soo 1), samanya-vishesha sidhanta	3	
4	Lakshana	Definition from TS	1	
5	Classification	As per Chakrapani (dravya-guna karma)		
6	Practical study /application with reference to Dravya, Guna & Karma	Importance of Vishesha in practical aspect, description in CS (Soo 1), samanya-vishesha sidhanta	3	
7	Significance of statement Pravrittirubhayasya tu	Importance of Samanya & vishesha - in anbiological sense		

Unit - 7 Samavaya & Abhava - Marks - 10 Hours - 6

Sl No	Name of topic	Minimum points	Hrs	Marks
1	Lakshana	As per TS & Charaka	2	10
2	Ayutasiddhavritti	Explanation & examples		
3	Practical clinical application in Ayurveda			
4	Lakshana & Classificastion of Abhava		4	
5	Clinical significance			

PAPER - 2 PART A

Number of Units - 5 Marks - 75

Hours - 55

Unit - 1 Pariksha & Aptopadesa - Marks - 15 Hours - 12

Sl No	Name of topic	Minimum points	Hrs	Marks
1	Definition, significance, necessity & use of pariksha	As per Nyaya & Charakasamhita	2	15
2	Definition of Prama, Prameya, Pramata & Pramana	As per TS/Nyaya	1	
3	Pramana	Significance & importance, enumeration as per different schools	2	
4	Chaturvidha pareeksha	As per Charaka sootra, importance (no details of each)	1	
5	Sub sudation of different pramanas under three		1	
6	Practical application of pareeksha in treatment	Enlisting trividha, shadvidha, dasavidha pareeksha	1	
7	Lakshana of aptopadesa & apta	As per TS & Charakasamhita	1	
8	Lakshana of Sabda & types	As per TS & Charakasamhita	1	
9	Sabdavritti	Four types of sabdavritti	1	
10	Saktigrahahetu	Seven types		
11	Vakya - characteristics, vakyarthajnanahetu	As per TS	1	

Unit - 2 Pratyakshapramana - Marks - 22 Hours - 14

Sl No	Name of topic	Minimum points	Hrs	Marks	
1	Lakshana	As per TS & Charakasamhita	4	10	
2	Classification	Nirvikalpa/savikalpa Laukika/alaukika (with further classification)			
3	Indriya - prapyakaritvam		4		
4	Shadvidha indriyasannikarsha				
5	Indriya - Lakshana, enumeration & Classification,	As per Sankhya, Charaka/Susruta	2		
6	Panchapanchaka	CS Soo8			
7	Panchabhautikatva of Indriya	Charaka/Susruta	1		12
8	Tulyayonitva	Su Sa 1			

9	Trayodasakarana, dominance of antahkarana	As per Sankhyakarika	1	
10	Hindrance (Pratyakshaanupalabdhi karana)	As per Charaka soo 11	2	
11	Enhancement of pratyaksha through various instruments	Different diagnostic instruments, scopes, imagimng technology etc.		
12	Necessity of other pramanas in addition to pratyaksha			
13	Practical study/application of pratyaksha in physiological, diagnostic and research grounds	As per Ashtangasangraha/Charaka (utility of Pratyaksha in diagnosis)		

Unit - 3 Anumanapareeksha - Marks - 18 Hours - 14

Sl No	Name of topic	Minimum points	Hrs	Marks
1	Lakshana	As per TS & Charakasamhita	1	18
2	Introduction to anumiti, paramarsa, vyapti, hetu, sadhya, paksha, drishtanta	As per TS (definitions with examples)	3	
3	Types of anumana	Asa per Nyaya & Charaka	3	
4	Types of vyapti	As per TS		
5	Lakshana & types of hetu	As per TS	4	
6	Description of ahetu & hetvabhasa	Ahetu (CS Vi 8) hetvabhasa (TS)		
7	Charactersitic & significance of Tarka	As per TS	1	
8	Practical study/application of anumana physiological, diagnostic and research grounds	As per As/Charaka	2	

Unit - 4 Yুক্তipareeksha & Upamana - Marks - 10 Hours - 8

Sl No	Name of topic	Minimum points	Hrs	Marks
1	Lakshana	Discussion with examples	4	10
2	Importance in Ayurveda	Different examples with association of multiple factors		
3	Practical study therapeutics & reaserch	Asa per Nyaya & Charaka		
4	Lakshana	Discussion with examples (TS)	4	
5	Application in therapeutics & research			

Unit - 5 Karya-Karanasidhanta - Marks - 10 Hours - 7

Sl No	Name of topic	Minimum points	Hrs	Marks
1	Lakshana of Karana & karya, types of Karana	As per TS	2	10
2	Significance in Ayurveda	As per Charaka		
3	Different opinions regarding the manifestation of Karya from Karana 1. Satkaryavada 2. Asatkaryavada 3. Parinamavada 4. Arambhavada 5. Paramanuvada 6. Vivartavada 7. Kshanabhanguravada 8. Svabhavavada 9. Pilupaka 10. Pitharapaka 11. Anekantavada 12. Svabhavoparamavada	Precise statement with examples	5	

PAPER - 2 PART B

Number of Units - 17 Marks - 25 Hours - 17

Sl no	Name of topic	Hrs	Marks
1	Etymological derivation (vyutpatti), syntactical derivation (nirukti), derivation of the word itihasa, necessity of knowledge of itihasa, significance & utility, means and methods of history, Historical person (vyakti), vishaya (subject), time period (kala), happening (ghatana), and their impact on Ayurveda	1	14
2	Introduction to authors of classical texts during samhita kala - Atreya, Dhanvantari,	1	
3	Kasyapa, Agnivesa,	1	
4	Susruta, Caraka	1	
5	Bhela, Harita, Dridhabala, Jeevaka	1	
6	Vagbhata, Nagarjuna,	1	
7	Introduction to the commentators of classica samhita: Bhattaraharischandra, Jejjata, ChakrapaniVijayarakshita	1	
8	Dalhana, Arunadatta, Hemadri, Indu	1	
9	Nischalakara, Gangadhara, Yogeendranathasen, Ranachandra,	1	
10	Authors of Sangraha kala: Bhavamisra, Sarngadhara, Madhava	1	
11	Vrinda, Sodhala, Govindadas, Basavaraja	1	
12	Authors of Modern Era: Gananath Sen, Yaminibhushan, Shankardajisastrri Pade, Swami Lakshmiram, Yadavji Trikamji, Dr. Ghanekar, Damodar Sharma Gaur, PV Sarma	1	

13	Globalization of Ayurveda – expansion of Ayurveda in Misra,(Egypt), Srilanka, Nepal & other nations	1	
14	Developmental activities of Ayurveda after independence, development in educational trends, establishment of different committees and their recommendations,	1	
15	Introduction and activities of Dept. AYUSH, CCIM, CCRAS, Ayurvedic Pharmacopoea Committee, National Medicinal Plants Board, Traditional Knowledge Digital Library (TKDL)	1	
16	Introduction to the following National Institutions: National Institute of Ayurveda, Jaipur, IPGT&RA Jamnagar, Faculty of Ayurveda BHU Varanasi; Rashtriya Ayurveda Vidyapeet, New Delhi	1	
17	Drugs & Cosmetic act, Introduction to WHO National and international journals	1	

Guidelines for Question Making

1. Mark division of Paper II, Part B may be like this
 - a. 5 marks – 2 questions
 - b. 2 marks – 5 questions
 - c. One word answer – 5 questions

MODULE FOR SANSKRIT

NUMBER OF PAPERS – 1

NUMBER OF HOURS – 90

TOTAL MARKS – 100

(Part A 50 marks & Part B 50 marks)

PART - A

संस्कृतव्याकरणाध्ययनम्

Number of Units – 9

Marks – 50

Hours – 45

Unit NO.	Name of Topic	Minimum Points to cover	Hrs	Marks
1	संज्ञाप्रकरणम्	संस्कृतभाषायाः परिचयः, लघुसिद्धान्तकौमुद्यां संज्ञाप्रकरणे विद्यमानानि सूत्राणि सोदाहरणम्।	15	6
2	विभक्त्यर्थाः	लघुसिद्धान्तकौमुद्यां विभक्त्यर्थप्रकरणे विद्यमानानि सूत्राणि सोदाहरणम्।	5	5
3	सन्धिप्रकरणम्	केवल सन्धिविच्छेदः, सन्धिप्रकरणं च पाठनीयम्। सुदध्युपास्याः, मध्वरिः, धात्रंशः। हरये, विष्णवे, नायकः, पावकः। उपेन्द्रः, गङ्गोदकम्, देवेश्वर्यम्, कृष्णकत्वम्, गङ्गोघ्नः, कृष्णोत्कण्ठयम्। प्रेजते, उपोषति। दैत्यारिः, श्रीशः, विष्णुदयः। हरेऽव, विष्णोऽव। ब्रह्म ऋषिः, ब्रह्मर्षिः। रामश्शेते, सच्चित्। रामव्यष्टः, पेष्टा, तटटीका। षण्णाम्, षण्णवतिः। वागीशः। एतद् मुरारिः, एतन्मुरारिः। तल्लयः। वाग्धरिः, वाग्हरिः। तप् शिवः, तच्छिवः। हरिं वन्दे। शान्तः। त्वङ्करोषि, त्वं करोषि। साम्राट्। चक्रिस्त्रायस्य। विष्णुस्त्राता। हरिश्शेते। शिवोऽर्घ्यः। शिवो वन्द्यः। पुनारमते। मनोरथः। अहरहः, अहर्गणः। एषोऽत्र। स शम्भुः	7	4
4	षट्लिङ्गप्रकरणम्	शब्दरूपाण्येव। पुल्लिङ्गे - अ, इ, उ, ऋकारान्ताः। स्त्रीलिङ्गे - आ, ई, ऋकारान्ताः। नपुंसकलिङ्गे - अकारान्ताः। सर्वनामशब्दाः - तद्, एतद्, किम् (त्रिषु लिङ्गेषु)। अस्मद्, युष्मद् हलन्ताः - मिथञ्, राजन्, आत्मन्, मनस्	भाषापरिचयकाले शब्दरूपाणि पाठयेत्।	4
5	धातुप्रकरणम्	धातुरूपाण्येव। परस्मैपदि - भू, पठ, पिब, गन्तु, कृञ्,.... आत्मनेपदि - वन्द, एष्	भाषापरिचयकाले धातुरूपाणि पाठयेत्।	4
6	वाच्यप्रयोगः	कर्तरि कर्मणि भाववाच्यप्रयोगाः केवलं वर्तमानकाले।	5	4
7	समासप्रकरणम्	समासलक्षणम्, विभागाः, तेषाम् उदाहरणानि लौकिकविग्रहः च।	5	4
8	प्रत्ययाः	णिच्, क्त, क्तवत्, शत्, शानच्, तुमुन्, तव्यत्, जनीयर्, क्त्वा, ल्यप्, ता, तरप्, तमप्, टाप, डीप्। (एतेषां रूपाणि तथा उदाहरणानि च)	8	4
9	अनुवादाः	आङ्गलेयात् संस्कृते अनुवादाः संस्कृतात् आङ्गलेये अनुवादः अशुद्धिसंशोधनम्	भाषापरिचयकाले कारयेत्	5 5 5

PART – B

भाषाध्ययनम्

Number of Units – 3

Marks – 50

Hours – 45

Unit NO.	Name of Topic	Minimum Points to cover	Hrs	Marks
1	आयुर्वेदार्थग्रन्थाध्ययनक्रमः	सुश्रुतसंहितायां शारीरस्थाने चतुर्थाध्यायः। अत्र सन्धयः, विग्रहवाक्यानि, अन्वयक्रमः इत्यादि	10	25
2	वैद्यकीयसुभाषितसाहित्यम्	प्रथमाध्यायादारभ्य दशमाध्यायपर्यन्तम्।	30	15
3	पञ्चतन्त्रम् - अपरीक्षितकारकम्	पञ्चकथाः।	5	10

1.2 संस्कृतम्

THEORY - ONE PAPER - 100 marks

TEACHING HOURS - 90 hours

PART-A

50 marks

संस्कृतव्याकरणाध्ययनम्

1. संज्ञाप्रकरणम्
2. विभक्तयर्थाः
3. सन्धिप्रकरणम् (सन्धिविच्छेदः, सन्धिकरणम्)
4. षड्लिंगप्रकरणम् (शब्दरूपाण्येव)
5. धातुप्रकरणम् (धातुरूपाण्येव)
(भ्वादिगणीय धातूनां पञ्च लट् लोट् लृट् लृट् विधिलिङ् लकारेषु रूपाणि)
6. वाच्यप्रयोगाः (कर्तरि कर्मणि भाववाच्यप्रयोगाः)
7. समासप्रकरणम्
8. प्रत्ययाः
(णिच्, क्त, क्तवत्, शतृ, शानच्, तुमुन्, तव्यत्, तृच्, क्त्वा, ल्यप्, ल्युट्, अनीचर, मतुप्, इनि, तन्, इतच्, अण्, इञ्, इक्, त्य, ता, पन्, इम्, निच्, तः, त्र, दा, धा, तरप्, तमप्, टाप्, झप्)
9. अनुवादः
A) From English / Hindi / regional language to Sanskrit
B) From Sanskrit to English / Hindi / regional language
C) Identification and correction of grammatical errors in the given sentences

The sentences for translation should be selected from the under mentioned reference books-

- 1) Laghusiddhanta Kaumudi- Acharya Varadaraja (Commentary by Shri Dhananand Shastry)
- 2) Brihatrayee- (Charaka Samhita, Sushruta Samhita, Ashtanga Hridayam)
- 3) Anuvada Chandrika-Chakradhara Hansa Nautiyal
- 4) Sanskruta Ayurved Sudha- Dr. Banwari Lal Gaur
- 5) Rachananuvada Kaumudi- Dr. Kapildev Dwivedi
- 6) Bhasha Sopanam- Published by Rashtreeya Samskruta Samsthanam, New Delhi

PART- B**50 marks****भाषाध्ययनम्**

- | | |
|---|----------|
| 1.) आयुर्वेदार्थग्रन्थाध्ययनक्रमः-Stepwise method of study of Ayurveda Arsha Granthas (Sushruta Samhita, Shareera Sthanam, Chapter-4) | 25 marks |
| 2.) वैद्यकीय-सुभाषितसाहित्यम् (अध्यायाः 1-10) | 15 marks |
| 3.) पञ्चतन्त्रम्-अपरीक्षितकारकम् (क्षपणक कथातः मूर्खपण्डितकथापर्यन्तम् पञ्चकथाः) | 10 marks |

REFERENCE BOOKS-

- 1.) Sushruta Samhita, Shareera Sthanam, Chapter-4
- 2.) Prabhashanam Work Book, Su.sam.chap.4
Published by-AYURVEDA ACADEMY@ BANGALORE;
Email-ayuacademy@gmail.com
- 3.) Vaidyakeeya Subhashita Sahityam - Dr. Bhaskara Govinda Ghanekar
- 4.) Panchatantra-(Apareekshitakarakam) -Pt. Vishnu Sharma

1.3 KRIYA SHARIR (PHYSIOLOGY)

Theory-Two Papers-200 Marks (100 markseach)

Teaching Hours-180 hours

PAPER-I

100 Marks

PART-A

50 Marks

1. Conceptual study of fundamental principles of AyurvediyaKriyaSharire.g -Panchamahabhuta, Tridosha,Triguna,Loka-PurushaSamya, Samanya-Vishesha. Description of basics of Srotas.
2. Definition and synonyms of the term Sharir, definition and synonyms of term Kriya, description of SharirDosha and ManasaDosha. Mutual relationship between Triguna-Tridosha&Panchmahabhuta. Difference between Shaarir and Sharir.Description of the components of Purushaand classification of Purusha, role of Shatdhatupurusha in KriyaShariraand Chikitsa.
3. Dosh- General description of Tridosha. Inter relationship between Ritu-Dosha-Rasa-Guna. Biological rhythms of Tridosha on the basis of day-night-age-season and food intake. Role of Dosh in the formation of Prakriti of an individual and in maintaining of health.Prakrita and VaikritaDosha.
4. VataDosha: Vyutpatti (derivation), Nirukti (etymology) of the term Vata, general locations, general properties and general functions of Vata, five types of Vata(Prana, Udana, Samana, Vyana, Apana) with their specific locations, specific properties, and specific functions. Respiratory Physiology in Ayurveda, Physiology of speech in Ayurveda.
5. Pitta Dosha:Vyutpatti, Nirukti of the term Pitta, general locations, general properties and general functions of Pitta, five types of Pitta (Pachaka, Ranjaka, Alochaka, Bhrajaka, Sadhaka) with their specific locations, specific properties, and specific functions. Similarities and differences between Agni and Pitta.
6. KaphaDosha: Vyutpatti, Nirukti of the term Kapha, general locations, general properties and general functions of Kapha, five types of Kapha (Bodhaka, Avalambaka, Kledaka, Tarpaka, Sleshaka) with their specific locations, specific properties, and specific functions.
7. Etiological factors responsible for Doshavridhi, Doshakshaya and their manifestations.
8. Concept ofKriyakala.
9. Prakriti:
 - a) Deha-Prakriti:Vyutpatti,Nirukti, various definitions and synonyms for the term 'Prakriti'. Intra-uterine and extra-uterine factors influencing Deha-Prakriti, classification and characteristic features of each kind of Deha-Prakriti.
 - b) Manasa-Prakriti: Introduction and types of Manasa-Prakriti.
10. Ahara: Definition, classification and significance of Ahara, Ahara-vidhi-vidhana, AshtaAharavidhiViseshayatana, AharaParinamkarBhava.
11. Aharapaka (Process of digestion): Description of AnnavahaSrotas and their Mula. Role of Grahani&Pittadhara Kala.
12. Description of Avasthapaka (Madhura, Amla and Katu). Description of Nishthapaka (Vipaka) and its classification. Separation of Sara and Kitta. Absorption of Sara. Genesis of Vata-Pitta-Kapha during Aharapaka process. Definition of the term Koshttha. Classification of Koshttha and the characteristics of each type of Koshttha.
13. Agni – Definition and importance, synonyms, classification, location, properties and functions of Agni and functions of Jatharagni, Bhutagni, and Dhatvagni.

Modern Physiology

- a) Definition and mechanisms of maintenance of homeostasis. Cell physiology. Membrane physiology. Transportation of various substances across cell membrane.
- b) Resting membrane potential and action potential.
- c) Physiology of respiratory system: functional anatomy of respiratory system. Definition of ventilation, mechanism of respiration, exchange and transport of gases, neural and chemical control of respiration, artificial respiration, asphyxia, hypoxia. Introduction to Pulmonary Function Tests.
- d) Physiology of Nervous System: General introduction to nervous system, neurons, mechanism of propagation of nerve impulse, physiology of CNS, PNS, ANS; physiology of sensory and motor nervous system, Functions of different parts of brain and physiology of special senses, intelligence, memory, learning and motivation. Physiology of sleep and dreams, EEG. Physiology of speech and articulation. Physiology of temperature regulation.
- e) Functional anatomy of gastro-intestinal tract, mechanism of secretion and composition of different digestive juices. Functions of salivary glands, stomach, liver, pancreas, small intestine and large intestine in the process of digestion and absorption. Movements of the gut (deglutition, peristalsis, defecation) and their control. Enteric nervous system.
- f) Acid-base balance, water and electrolyte balance. Study of basic components of food. Digestion and metabolism of proteins, fats and carbohydrates. Vitamins& Minerals- sources, daily requirement, functions, manifestations of hypo and hypervitaminosis.

1. Dhatu:

Etymology, derivation, definition, general introduction of term Dhatu, different theories related to Dhatuposhana (DhatuposhanaNyaya)

2. Rasa Dhatu:

Etymology, derivation, location, properties, functions and Praman of Rasa-dhatu. Physiology of RasavahaSrotas, Formation of Rasa Dhatu from Aahara Rasa, circulation of Rasa (Rasa-Samvahana), role of VyanaVayu and SamanaVayu in Rasa Samvahana. Description of functioning of Hridaya. Ashtavidha Sara (8 types of Sara), characteristics of TvakasaraPurusha, conceptual study of mutual interdependence (Aashraya-AashrayiBhaava) and its relation to Rasa and Kapha. Manifestations of Kshaya and Vriddhi of Rasa.

3. RaktaDhatu:

Etymology, derivation, synonyms, location, properties, functions and Praman of RaktaDhatu. Panchabhautikatva of RaktaDhatu, physiology of RaktavahaSrotas, formation of Raktadhatu, Ranjana of Rasa by Ranjaka Pitta, features of ShuddhaRakta, specific functions of Rakta, characteristics of RaktasaraPurusha, manifestations of Kshaya and Vriddhi of Raktadhatu, mutual interdependence of Rakta and Pitta.

4. MamsaDhatu :

Etymology, derivation, synonyms, location, properties and functions of MamsaDhatu, physiology of MamsavahaSrotasa, formation of MamsaDhatu, characteristics of MamsasaraPurusha, manifestations of Kshaya and Vriddhi of MamsaDhatu. Concept of Peshi.

5. MedaDhatu :

Etymology, derivation, location, properties, functions and Praman of MedaDhatu, physiology of MedovahaSrotas, formation of MedoDhatu, characteristics of MedasaraPurusha and manifestations of Kshaya and Vriddhi of Meda.

6. AsthiDhatu:

Etymology, derivation, synonyms, location, properties, functions of AsthiDhatu. Number of Asthi. Physiology of AsthivahaSrotas and formation of AsthiDhatu, characteristics of AsthisaraPurusha, mutual interdependence of Vata and AsthiDhatu, manifestations of Kshaya and Vriddhi of AsthiDhatu.

7. MajjaDhatu :

Etymology, derivation, types, location, properties, functions and Praman of MajjaDhatu, physiology of MajjavahaSrotas, formation of MajjaDhatu, characteristics of Majja Sara Purusha, relation of Kapha, Pitta, RaktaandMajja, manifestations of Kshaya and Vriddhi of MajjaDhatu.

8. ShukraDhatu:

Etymology, derivation, location, properties, functions and Praman of ShukraDhatu, physiology of ShukraravahaSrotas and formation of ShukraDhatu. Features of ShuddhaShukra, characteristics of Shukra-Sara Purusha, manifestations of Kshaya and Vriddhi of ShukraDhatu.

9. Concept of Ashraya-Ashrayibhava i.e. inter-relationship among Dosha, Dhatu Mala and Srotas.

10. Ojas: Etymological derivation, definition, formation, location, properties, Praman, classification and functions of Ojas. Description of Vyadhikshamatva. BalaVriddhikaraBhava.

Classification of Bala. Etiological factors and manifestations of Ojavisramsas, Vyapat and Kshaya.

11. Upadhatu: General introduction, etymological derivation and definition of the term Upadhatu. Formation, nourishment, properties, location and functions of each Upadhatu.

- a) Stanya: Characteristic features and methods of assessing Shuddha and DushitaStanya, manifestations of Vriddhi and Kshaya of Stanya.
- b) Artava: Characteristic features of Shuddha and DushitaArtava. Differences between Raja and Artava, physiology of ArtavavahaSrotas.
- c) Tvak: classification, thickness of each layer and functions.

12. Mala: Etymological derivation and definition of the term Mala. Aharamala: Enumeration and description of the process of formation of Aharamala.

- a) Purisha: Etymological derivation, definition, formation, properties, quantity and functions of Purisha. Physiology of PurishavahaSrotas, manifestations of Vriddhi and Kshaya of Purisha.
- b) Mutra: Etymological derivation, definition, formation, properties, quantity and functions of Mutra. Physiology of MutravahaSrotas, physiology of urine formation in Ayurveda, manifestations of Vriddhi and Kshaya of Mutra.
- c) Sveda: Etymological derivation, definition, formation and functions of Sveda. Manifestations of Vriddhi and Kshaya of Sveda. Description of SvedvahaSrotas
- d) Dhatumala: Brief description of each type of Dhatumala.

13. Panchagyanendriya: Physiological description of Panchagyanendriya and physiology of perception of Shabda, Sparsha, Rupa, Rasa and Gandha. Physiological description of Karmendriya.

14. Manas: Etymological derivation, definition, synonyms, location, properties, functions and objects of Manas. Physiology of ManovahaSrotas.

15. Atma: Etymological derivation, definition, properties of Atma. Difference between Paramatma and Jivatma; Characteristic features of existence of Atma in living body

16. Nidra: Nidrotipatti, types of Nidra, physiological and clinical significance of Nidra; Svapnotipatti and types of Svapna.

PART -B**50 marks****Modern Physiology**

1. Haemopoetic system – composition, functions of blood and blood cells, Haemopoiesis (stages and development of RBCs, and WBCs and platelets), composition and functions of bone marrow, structure, types and functions of haemoglobin, mechanism of blood clotting, anticoagulants, physiological basis of blood groups, plasma proteins, introduction to anaemia and jaundice.
2. Immunity, classification of immunity: Innate, acquired and artificial. Different mechanisms involved in immunity: Humoral (B-cell mediated) and T-Cell mediated immunity. Hypersensitivity.
3. Muscle physiology – comparison of physiology of skeletal muscles, cardiac muscles and smooth muscles. Physiology of muscle contraction.
4. Physiology of cardio-vascular system: Functional anatomy of cardiovascular system. Cardiac cycle. Heart sounds. Regulation of cardiac output and venous return. Physiological basis of ECG. Heart-rate and its regulation. Arterial pulse. Systemic arterial blood pressure and its control.
5. Adipose tissue, lipoproteins like VLDL, LDL and HDL triglycerides.
6. Functions of skin, sweat glands and sebaceous glands.
7. Physiology of male and female reproductive systems. Description of ovulation, spermatogenesis, oogenesis, menstrual cycle.
8. Physiology of Excretion – functional anatomy of urinary tract, functions of kidney. Mechanism of formation of urine, control of micturition. Formation of faeces and mechanism of defecation.
9. Endocrine glands – General introduction to endocrine system, classification and characteristics of hormones, physiology of all endocrine glands, their functions and their effects.

PRACTICAL**Teaching hours-180****Ayurvedic practical****100 marks**

1. Assessment of Prakriti
2. Assessment of Dosha (Features of Vriddhi- Kshaya)
3. Assessment of Dhatu (Features of Vriddhi- Kshaya)
4. Assessment of Agni
5. Assessment of Koshtha
6. Assessment of Sara
7. Nadipariksha

Modern physiology practical

1. Introduction to laboratory instruments- Simple & Compound Microscope, Scalp vein set, bulbs for blood collection, Sahli's Haemometer, Haemocytometer, pipettes, Urinometer, Albuminometer, Stethoscope, B.P. Apparatus, Harpenden's caliper, Clinical Hammer, Tuning Fork, Stop Watch, Thermometer, Centrifuge machine, ECG Machine
2. Collection of blood sample – prick, vene-puncture method, use of anticoagulants
3. Preparation of blood smear and staining
4. Estimation of Hemoglobin
5. Microscopic examination of blood

- a. Total RBC count
- b. Total WBC count
- c. Differential leucocyte count
6. Packed cell volume (PCV) demonstration
7. ESR demonstration
8. Bleeding time, Clotting time
9. Blood grouping and Rh typing
10. Examination of Cardio-Vascular system
 - a. Pulse examination
 - b. Arterial blood pressure measurement
 - c. Examination of heart sounds
 - d. ECG demonstration
11. Examination of Respiratory system
 - a. Respiratory rate
 - b. Breath sounds
 - c. Spirometry
12. Examination of Nervous System- Sensory & Motor.
13. Urine examination –Physical examination, chemical examination. Test for normal constituents of urine. Detection of specific gravity and reaction of urine.

Distribution of Practical marks

1. Laboratory Practical	- 20
2. Human Experiment	- 15
3. Spotting	- 15
4. PrakritiSaradipariksha	- 20
5. Practical Record	- 10
6. Viva- voce	- 20

REFERENCE BOOKS:-

- AyurvediyaKriyasharir - RanjitRai Desai
- KayachikitsaParichaya - C. Dwarkanath
- Prakrit Agni Vigyan - C. Dwarkanath
- SharirKriyaVigyan - Shiv CharanDhyani
- AbhinavaSharirKriyaVigyana - AcharyaPriyavrata Sharma
- Doshadhatu Mala Vigyana - Shankar GangadharVaidya
- PrakritaDoshavigyana - AcharyaNiranjanaDev
- Tridoshavigyana - ShriUpendranath Das
- ShariraTatvaDarshana - HirlekarShastri
- Prakrita Agni Vigyana - NiranjanaDev
- DehadhatvagniVigyana - Vd. Pt. HaridattShastri
- SharirKriyaVigyana (Part 1-2) - AcharyaPurnchandra Jain
- SharirKriyaVigyana - ShriMoreshwarDutt. Vd.
- ShariraKriyaVijnana (Part 1 and 2) – NandiniDhargalkar
- Doshadhatu Mala Vigyana - Basant Kumar Shrimal
- AbhinavaSharirKriyaVigyana - Dr. Shiv Kumar Gaur
- PragyogikKriyaSharir - Acharya P.C. Jain
- Kaya ChikitsaParichaya - Dr. C. Dwarkanath
- Concept of Agni - Vd. Bhagwan Das
- PurushVichaya - Acharya V.J. Thakar
- KriyaSharir - Prof. Yogesh Chandra Mishra
- SharirKriyaVigyana - Prof. JayaramYadav&Dr. Sunil Verma.
- Basic Principles of Kriya-Sharir (A treatise on Ayurvedic Physiology) by Dr. Srikant Kumar Panda

- SharirKriya – Part I & Part II – Dr. Ranade, Dr. Deshpande & Dr. Chobhe
- Human Physiology in Ayurveda - DrKishorPatwardhan
- SharirkriyaVignyan Practical Hand Book – Dr.Ranade, Dr.Chobhe, Dr. Deshpande
- SharirKriya Part 1 – Dr.R.R.Deshapande, Dr.Wavhal
- SharirKriya Part 2 – Dr.R.R.Deshapande, Dr.Wavhal
- Ayurveda KriyaSharira - Yogesh Chandra Mishra
- Textbook of Physiology - Gyton & Hall
- A Textbook of Human Physiology – A.K.Jain
- Essentials of Medical Physiology - Sembulingam, K.
- Concise Medical Physiology - Chaudhari, Sujit K.
- Principles of Anatomy & Physiology - Tortora & Grabowski
- Textbook of Medical Physiology - InduKhurana

TEACHING MODULE FOR KRIYA SAREERA SYLLABUS 2012 Topics and Lesson plan with time frame and marks				
Theory-Two Papers-200 Marks (100 marks each)		Teaching hours 180 hours (Paper I – 90 hrs, Paper II – 90 hrs)		
PAPER- I		100 marks		
PART A - 50 marks		Teaching hours 45		
PAPER I – Part A				
	Minimum points to cover	Nature of tuition	Hours allotted	Marks
Module 1 Basic concepts	Conceptual study of the fundamentals of Ayurvedeeya kriyasareera e.g. Panchabhuta, tridosha, triguna	Detailed	5	3
	<i>Loka purusha samya, samanya visesha siddhanta, description of basics of srotas (including numbers of srotases, moola sthana, general description)</i>	<i>Non-detailed</i>		
Module 2 Sareera & Doshas	Definition and synonyms of the term Sharir, definition and synonyms of term Kriya, description of Sharir Dosha and Manasa Dosha. Mutual relationship between Triguna - Tridosha & Panchmahabhuta. Description of the components of Purusha and classification of Purusha	Detailed	6	4
	<i>Difference between Shaarir and Sharir, Role of Shatdhatupurusha in Kriya Sharira and Chikitsa.</i>	<i>Non-detailed</i>		
Module 3 Thridoshas	<i>Dosha- General description of Tridosha. Inter relationship between Ritu-Dosha-Rasa-Guna. Biological rhythms of Tridosha on the basis of day-night-age-season and food intake. Role of Dosha in the formation of Prakriti of an individual (to be taught along with 9) and in maintaining health. Prakrita and Vaikrita</i>	<i>Non-detailed</i>	3	3

	<i>Dosha.</i>			
Module 4 Vata dosha	Vata Dosha: general properties and general functions of Vata, five types of Vata (Prana, Udana, Samana, Vyana, Apana) with their specific locations, specific properties, and specific functions. Respiratory Physiology in Ayurveda, Physiology of speech in Ayurveda.	Detailed	4	6
	<i>Vyutpatti (derivation), Nirukti (etymology) of the term Vata, general locations</i>	<i>Non-detailed</i>		
Module 5 Pitta dosha	Pitta Dosha: general properties and general functions of Pitta, five types of Pitta (Pachaka, Ranjaka, Alochaka, Bhrajaka, Sadhaka) with their specific locations, specific properties, and specific functions. Similarities and differences between Agni and Pitta.	Detailed	3	5
	<i>Vyutpatti, Nirukti of the term Pitta, general locations</i>	<i>Non-detailed</i>		
Module 6 Kapha dosha	Kapha Dosha: general properties and general functions of Kapha, five types of Kapha (Bodhaka, Avalambaka, Kledaka, Tarpaka, Śleshaka) with their specific locations, specific properties, and specific functions.	Detailed	3	5
	<i>Vyutpatti, Nirukti of the term Kapha, general locations</i>	<i>Non-detailed</i>		
Module 7 Causes of dosha Vridhy and kshaya	Etiological factors responsible for Dosha Vridhhi and their manifestations	Detailed	2	3
	<i>Etiological factors responsible for dosha kshaya and their manifestations.</i>	<i>Non-detailed</i>		
Module 8 Kriyakala	<i>Concept of Kriyakala</i>	<i>Non-detailed</i>	2	3
Module 9 Prakruthy	A) Deha-Prakriti: Nirukti, various definitions and synonyms for the term 'Prakriti'. Intra-uterine and extra-uterine factors influencing Deha-Prakriti, classification and characteristic features of each kind of Deha-Prakriti.	Detailed	5	5
	Deha- Prakriti: Vyutpatti <i>B) Manasa- Prakriti: Introduction and types of Manasa- Prakriti.</i>	<i>Non-detailed</i>		
Module 10 Ahara	Ahara: Definition, and significance of Ahara, Ashta Aharavidhi Viseshayatana, Ahara Parinamkara Bhavas.	Detailed	5	10 marks for

	<i>Classification of Ahara, Ahara-vidhi-vidhana</i>	<i>Non-detailed</i>		module 10,11 and 12
Module 11 Ahara paka	Aharapaka (Process of digestion): Description of Annavaha Srotas and their Moola. Role of Grahani & Pittadhara Kala.	Detailed	1	
Module 12 Koshta and sara-kitta vibhajana	Description of Avasthapaka (Madhura, Amla and Katu). Description of Nishthapaka (Vipaka) and its classification. Separation of Sara and Kitta. Absorption of Sara. Genesis of Vata-Pitta-Kapha during Aharapaka process. Definition of the term Koshtha. Classification of Koshtha and the characteristics of each type of Koshtha.	Detailed	3	
Module 13 Agni	Agni: Definition and importance, synonyms, classification, location, properties and functions of Agni and functions of Jatharagni, Bhutagni, and Dhatvagni.	Detailed	3	3
PAPER I - Part B (Modern Physiology)				
Teaching hours 45 marks				50
	Minimum points to cover	Nature of tuition	Hours allotted	Marks
Module A Cell & homoeostasis	Definition and mechanisms of maintenance of homeostasis.	Detailed	2	3
	<i>Cell physiology, Membrane physiology, Transportation of various substances across cell membrane.</i>	<i>Non-detailed</i>		
Module B Membrane potential & action potential	Resting membrane potential and action potential	Detailed	2	3
Module C Respiratory system	Physiology of respiratory system: functional anatomy of respiratory system. Definition of ventilation, mechanism of respiration, exchange and transport of gases, neural and chemical control of respiration	Detailed	10	10
	<i>Artificial respiration, asphyxia, hypoxia. Introduction to Pulmonary Function Tests.</i>	<i>Non-detailed</i>		
Module D Nervous system	Physiology of sensory and motor nervous system, Physiology of CNS, PNS, ANS, Functions of different parts of brain and physiology of special senses, Physiology of speech and articulation. Physiology of temperature regulation.	Detailed	17	20
	<i>Physiology of Nervous System: General introduction to nervous system, neurons, mechanism of propagation of nerve impulse, physiology of intelligence,</i>	<i>Non-detailed</i>		

	memory, learning and motivation. Physiology of sleep and dreams, EEG.			
Module E GI Tract	Functional anatomy of gastro-intestinal tract, mechanism of secretion and composition of different digestive juices. Functions of salivary glands, stomach, liver, pancreas, small intestine and large intestine in the process of digestion and absorption. Movements of the gut (deglutition, peristalsis, defecation) and their control. Enteric nervous system.	Detailed	10	9
Module F Basic food components, digestion & metabolism	<i>Acid-base balance, water and electrolyte balance. Study of basic components of food. Digestion and metabolism of proteins, fats and carbohydrates. Vitamins & Minerals - sources, daily requirement, functions, manifestations of hypo and hypervitaminosis.</i>	<i>Non-detailed</i>	4	5
PAPER II - Part A				
Teaching hours 45 marks				50
	Minimum points to cover	Nature of tuition	Hours allotted	Marks
Module 1 Dhathu	<u>Dhatu:</u> Etymology, derivation, definition, general introduction of term Dhatu, different theories related to Dhatuposhana (Dhatuposhana Nyaya)	Detailed	3	5
Module 2 Rasa Dhathu	<u>Rasa Dhatu:</u> Location, properties, functions of Rasa-dhatu. Physiology of Rasavaha Srotas, Formation of Rasa Dhatu from Aahara Rasa, circulation of Rasa (Rasa-Samvahana), role of Vyana Vayu and Samana Vayu in Rasa Samvahana. Description of functioning of Hridaya. Ashtavidha Saara (8 types of Saara), characteristics of Tvakasara Purusha, conceptual study of mutual interdependence (Aashraya-Aashrayi Bhaava) and its relation to Rasa and Kapha.	Detailed	4	15 marks for modules 2 to 8
	<i>Etymology, derivation, and Praman of Rasa Dhatu Manifestations of kshaya and Vriddhi of Rasa dhathu.</i>	<i>Non-detailed</i>		
Module 3 Raktha Dhathu	<u>Rakta Dhatu:</u> Location, properties, functions of Rakta Dhatu. Panchabhautikatva of Rakta Dhatu, physiology of Raktavaha Srotas, formation of Raktadhathu, Ranjana of	Detailed	4	

	Rasa by Ranjaka Pitta, features of Shuddha Rakta, specific functions of Rakta, characteristics of Raktasara Purusha, mutual interdependence of Rakta and Pitta.			
	<i>Etymology, derivation, synonyms and Praman of Rakta Dhatu, manifestations of Kshaya and Vriddhi of Raktadhatu</i>	Non-detailed		
Module 4 Mamsa Dhathu	<u>Mamsa Dhatu:</u> Location, properties and functions of Mamsa Dhatu, physiology of Mamsavaha Srotasa, formation of Mamsa Dhatu, characteristics of Mamsasara Purusha, Concept of Peshi.	Detailed	2	
	<i>Etymology, derivation, synonyms, manifestations of Kshaya and Vriddhi of Mamsa Dhatu</i>	Non-detailed		
Module 5 Medo Dhathu	<u>Medo Dhatu:</u> Location, properties, functions of Meda Dhatu, physiology of Medovaha Srotas, formation of Medo Dhatu, characteristics of Medasara Purusha	Detailed	2	
	<i>Etymology, derivation, and praman of Medo Dhatu and manifestations of Kshaya and Vriddhi of Medas.</i>	Non-detailed		
Module 6 Asthy Dhathu	<u>Asthi Dhatu:</u> Location, properties, functions of Asthi Dhatu. Physiology of Asthivaha Srotas and formation of Asthi Dhatu, characteristics of Asthisara Purusha, mutual interdependence of Vata and Asthi Dhatu	Detailed	3	
	<i>Etymology, derivation, synonyms, Number of Asthi, manifestations of Kshaya and Vriddhi of Asthi Dhatu.</i>	Non-detailed		
Module 7 Majja Dhathu	<u>Majja Dhatu:</u> Location, properties and functions of Majjaa Dhatu, physiology of Majjavaha Srotas, formation of Majja Dhatu, characteristics of Majja Sara Purusha, relation of Kapha, Pitta, Rakta and Majja	Detailed	2	
	<i>Etymology, derivation, types and Praman of Majjaa Dhatu, manifestations of Kshaya and Vriddhi of Majja Dhatu.</i>	Non-detailed		
Module 8 Sukra Dhathu	<u>Shukra Dhatu:</u> Location, properties and functions of Shukra Dhatu, physiology of Shukraravaha Srotas and formation of Shukra Dhatu. Features of Shuddha Shukra, characteristics of Shukra-Sara Purusha	Detailed	2	

	<i>Etymology, derivation and Praman of Shukra Dhatu, Manifestations of Kshaya and Vriddhi of Shukra Dhatu.</i>	Non-detailed		
Module 9 Ashraya-ashrayi bhavas	Concept of Ashraya-Ashrayi bhava i.e. inter-relationship among Dosha, Dhatu Mala and Srotas.	Detailed	3	5
Module 10 Ojas	<u>Ojas:</u> Definition, formation, location, properties, Praman, classification and functions of Ojas. Description of Vyadhikshamatva. Bala Vriddhikara Bhava. Classification of Bala.	Detailed	3	5
	<i>Etymological derivation, Etiological factors and manifestations of Ojavisramsas, Vyapat and Kshaya.</i>	Non-detailed		
Module 11 Upa Dhatu	<u>Upadhatu:</u> General introduction, definition of the term Upadhatu. Formation, nourishment, properties, location and functions of each Upadhatu.	Detailed	2	3
	<i>Etymological derivation of the term Upadhatu</i> <u>Upadhatu:</u> a) <u>Stanya:</u> Characteristic features and methods of assessing Shuddha and Dushita Stanya, manifestations of Vriddhi and Kshaya of Stanya. b) <u>Artava:</u> Characteristic features of Shuddha and Dushita Artava. Differences between Raja and Artava, physiology of Artavavaha Srotas. c) <u>Tvak:</u> classification, thickness of each layer and functions.	Non-detailed		
Module 12 Mala	<u>Mala:</u> Definition of the term Mala. Aharamala: Enumeration and description of the process of formation of Aharamala.	Detailed	2	3
	<i>Etymological derivation of the term Mala.</i> <u>Mala:</u> a) <u>Purisha:</u> Etymological derivation, definition, formation, properties, quantity and functions of Purisha. Physiology of Purishavaha Srotas, manifestations of Vriddhi and Kshaya of Purisha. b) <u>Mutra:</u> Etymological derivation, definition, formation, properties, quantity and functions of Mutra. Physiology of Mutravaha Srotas, physiology of urine formation in Ayurveda, manifestations of	Non-		

	<i>Vridhhi and Kshhaya of Mutra.</i> c) <i>Sveda: Etymological derivation, definition, formation and functions of Sveda. Manifestations of Vridhhi and Kshhaya of Sveda. Discription of Svedvaha Strotas</i> d) <i>Dhatumala: Brief description of each type of Dhatumala.</i>	<i>detailed</i>		
Module 13 Indriya	Panchajnanendriya: Physiological description of Panchagyaanendriya and physiology of perception of Shabda, Sparsha, Rupa, Rasa and Gandha.	Detailed	4	4
	<i>Physiological description of Karmendriya.</i>	<i>Non-detailed</i>		
Module 14 Manas	Manas: Definition, synonyms, location, properties, functions and objects of Manas.	Detailed	4	5
	<i>Etymological derivation of Manas, Physiology of Manovaha Srotas.</i>	<i>Non-detailed</i>		
Module 15 Atma	<i>Atma: Etymological derivation, definition, properties of Atma. Difference between Paramatma and Jivatma; Characteristic features of existence of Atma in living body.</i>	<i>Non detailed</i>	2	5 marks for modules 15 and 16
Module 16 Nidra	Nidra: Nidrotpatti, types of Nidra, physiological and clinical significance of Nidra	Detailed	3	
	<i>Svapnotpatti and types of Svapna.</i>	<i>Non-detailed</i>		
PAPER II - Part B				
(Modern Physiology)				
Teaching hours 45			50 marks	
Module 1 Blood	Minimum points to cover	Nature of tuition	Hours allotted	Marks
	Haemopoetic system - composition, functions of blood and blood cells, Haemopoiesis (stages and development of RBCs, and WBCs and platelets), composition and functions of bone marrow, mechanism of blood clotting, anticoagulants, physiological basis of blood groups, plasma proteins	Detailed	5	7
	<i>Structure, types and functions of haemoglobin Introduction to anaemia and jaundice.</i>	<i>Non-detailed</i>		
Module 2 Immunity	Immunity, classification of immunity: Innate, acquired and artificial. Different mechanisms involved in immunity: Humoral (B-cell mediated) and T-Cell mediated immunity. Hypersensitivity.	Detailed	3	5

	<i>Hypersensitivity</i>	<i>Non-detailed</i>		
Module 3 Muscle physiology	Muscle physiology - comparison of physiology of skeletal muscles, cardiac muscles and smooth muscles. Physiology of muscle contraction.	Detailed	3	3
Module 4 CVS	Physiology of cardio-vascular system - Cardiac cycle. Heart sounds. Regulation of cardiac output and venous return. Physiological basis of ECG. Heart-rate and its regulation. Arterial pulse. Systemic arterial blood pressure and its control.	Detailed	9	10
	<i>Functional anatomy of cardiovascular system.</i>	<i>Non-detailed</i>		
Module 5 Lipoproteins	Adipose tissue, lipoproteins like VLDL, LDL and HDL triglycerides.	Detailed	2	4 marks for modules 5 and 6
Module 6 Skin	Functions of skin <i>Functions of sweat glands and sebaceous glands.</i>	Detailed <i>Non detailed</i>	2	
Module 7 Reproductive system	Physiology of male and female reproductive systems. Description of ovulation, spermatogenesis, oogenesis, menstrual cycle.	Detailed	4	4
Module 8 Excretory system	Physiology of Excretion - functions of kidney. Mechanism of formation of urine, control of micturition. Formation of faeces and mechanism of defecation.	Detailed	6	7
	<i>Functional anatomy of urinary tract</i>	<i>Non detailed</i>		
Module 9 Endocrine system	Endocrine glands - General introduction to endocrine system, classification and characteristics of hormones, physiology of all endocrine glands, their functions and their effects.	Detailed	11	10
PRACTICALS				
Topics, lesson plan and time frame				
Teaching hours 180			100 marks	

Distribution of Practical marks

7. Laboratory Practical (Haematology, Urine and blood bio-chemistry etc.) - 20
8. Human Experiments (BP, Temperature, Examinations of Respiratory system, Examination of Nervous system, ECG, auscultation, DTRs etc.) - 15
9. Spotting - 15
10. *Prakriti Saradi pariksha* - 20
11. Practical Record - 10
12. Viva- voce - 20

Ayurvedic practicals

1. Assessment of <i>prakruti</i>	2 hrs
2. Assessment of <i>dosha</i>	2 hrs
3. Assessment of <i>dhatu</i>	2 hrs
4. Assessment of <i>agni</i>	2 hrs
5. Assessment of <i>koshtha</i>	2 hrs
6. Assessment of <i>saara</i>	2 hrs
7. <i>Nadi pariksha</i>	2 hrs

Modern physiology practicals

1. Introduction to laboratory instruments (Introduction to laboratory instruments- Simple & Compound Microscope, Scalp vein set, bulbs for blood collection, Sahli's Haemometer, Haemocytometer, pipettes, Urinometer, Albuminometer, Stethoscope, B.P. Apparatus, Harpenden's caliper, Clinical Hammer)	5 hrs
2. Collection of blood sample (Prick, vene-puncture method, use of anticoagulants)	1 hr
3. Preparation of blood smear and staining	2 hrs
4. Estimation of hemoglobin	2hrs
5. Microscopic examination of blood	
a. Total RBC Count	2 hrs
b. Total WBC count	2 hrs
c. Differential leucocyte count	2 hrs
6. PCV demonstration	2 hrs
7. ESR demonstration	2 hrs
8. Bleeding time, Clotting time	2 hrs
9. Blood grouping & Rh typing	2 hrs
10. Examination of cardio vascular system	77 hrs
Pulse examination	
BP measurement	
Heart sounds	
ECG demonstration	
11. Examination of respiratory system	15 hrs
Respiratory rate	
Breath sounds	
Spirometry	
12. Examination of nervous system- sensory & motor	20 hrs
13. Urine Examination	30 hrs
(Physical & chemical examination, test for normal constituents. Detection of specific gravity and reaction).	
<i>The hours allotted for the systemic examination can be re distributed to cover the theory portions of the same or other systems in detail</i>	

Addendum for better teaching in *Kriyasareera* in various modules

I-B. Module A

Cell membrane- models. Special categories of transport

I-B. Module B

Action potential- depolarization, repolarisation, ionic basis, Action potential curve

I-B. Module C

Hypoxia, Bronchial Asthma, Asphyxia, Artificial respiration. Functional anatomy, reparatory pressures, compliance, dead space, ventilation perfusion ratio, respiratory exchange ratio, RQ

I-B. Module D

Neuron- parts, myelin sheath, neurilemma, Injury, Degeneration and Regeneration of nerve fibres. Neuroglia- types and functions. Reflexes- types, applied UMN, LMN, Synapse-types,

functions and properties. Functions of Brain stem, Thalamus, Hypothalamus, Cerebellum. Basal ganglia- components, functions and applied aspects (Parkinson's, Wilson's, Chorea). Brain - lobes, areas and their functions. Limbic system- components and functions. Receptors, Muller's law, physiology of pain. Spinal cord- tracts, disc prolapsed. Posture and equilibrium, vestibular apparatus. Amnesia, dementia, Alzheimer's. Speech- nervous control, disorders

I-B. Module E

GIT: functional anatomy, mechanism of secretion of saliva, gastric juice, gastritis, peptic ulcer, mastication, movements of stomach, gastro intestinal hormones- gastrin, secretin, CCK, VIP etc.

II-B. Module 1

Investigations in bleeding disorders

II-B. Module 2

Immunization – types

II-B. Module 3

Properties of skeletal muscles, simple muscle twitch, effect of multiple stimuli, refractive periods, molecular basis of muscle contraction

II-B. Module 4

CVS: Functional anatomy, Fetal circulation, Shock, Coronary and cerebral circulation, autoregulation

II-B. Module 7

Reproductive system: Functional anatomy, menopause

II-B. Module 8

Excretory system: Functional anatomy of kidneys, renal function test

II-B. Module 9

Endocrine functions of organs other than endocrine glands, local hormones

**1.4 RACHNA SHARIR
(ANATOMY)**

Theory- Two Papers-200 Marks-(100 marks each)

Teaching Hours-180 hours

PAPER-I

100 marks

PART-A

50 marks

1. ShariroprakramaniyaShaarira

Sharira and shaariravyakhya (definitions of sharira and shaarira), shadangatvam (six regions of the body), angapratyangavibhaga (sub divisions). Mritasharirsamshodhan. Shaarirashastravibhaga, shaariragyanprayojana . Constitution of purusha according to dhatubheda, panchabhautikatvam, trigunatmakatvam, tridoshamayatvam, karma purusha, and doshadhatumala-mulakatvam.

2. ParibhashaShaarira

Kurcha, kandara, jala, asthisanghat, seemanta, seevani, rajju, snayu and lasika.

3. GarbhaShaarira

Garbha definitions, explanation of shukra, artava, garbhadhana. Role of tridosha and panchmahabhuta in the fetal development. Beeja, beejabhaga and beejabhagavayava, lingavinischaya, masanumasikagarbhavriddhi-krama, garbhottpadakbhava, garbhavriddhikarabhava, garbhaposhana, aparanimana, nabhinadinirmana. Angapratyangaut patti.

4. PramanaShaarira: Angulipramana.

5. AsthiShaarira

Asthivyakhya, number, types, asthiswaroopa, vasa, meda and majja.

6. SandhiShaarira

Sandhivyakhya, numbers, types of asthisandhi.

7. Sira, Dhamani, SrotasShaarira

- a) Definition, types and number of sira and dhamani.
- b) Description of Hridaya.
- c) Srotashaarira: Definition, types of srotas and srotomula.

8. PeshiShaarira

- a) Peshivyakhya, structure, types, number and importance.
- b) Description of Peshi.

9. KoshthaEvamAshayaShaarira

- a) Definition of koshtha and number of koshthanga.
- b) Types and description of ashaya.

10. KalaaShaarira

Kalaa: definition and types.

11. UttamangiyaShaarira

Shatchakra, ida, pingala and sushumnanadi - brief description.

12. MarmaShaarira

Marma: definition, number, location, classification, clinical importance with vidhalakshana. Explanation of trimarmas. Detail description of marmas.

13. IndriyaShaarira

Definition of indriya, indriyaartha and indriyaadhistan, their number and importance. Description of gyanendria, karmendriya and ubhayendriya (manas).

PART-B

50 marks

1. Definition and branches of anatomy. Preservation methods of the cadaver.

2. Anatomical Terminologies

Anatomical position, Planes, and explanation of anatomical terms related to skin, fasciae, bones, joints and their movements, muscles, ligaments, tendons, blood vessels, nerves,.

3. Embryology

Definitions and branches of embryology. Embryo and fetus. Sperm and ovum, fertilization. Cleavage. Germ layers formation and their derivatives. Laws of heredity, Sex determination and differentiation, Month-wise development of embryo. Foetal circulation, placenta formation, Umbilical cord formation.

4. Osteology

Bone: Definition, ossification, structure and types. Description of bones with clinical anatomy.

5. Arthrology

Joints: Definition, structure types and movements. Description of joints of extremities, vertebral joints and temporomandibular joint with their clinical anatomy.

6. Cardiovascular system

- a. Definition, types and structure of arteries and veins.
- b. Description of heart and blood vessels with their course and branches.
- c. Pericardium with applied aspect.

7. Lymphatic system

Definition, types and structure of lymph vessels, lymph glands with their clinical aspect.

8. Myology

- a) Structure and types of muscles.
- b) Description of muscles; their origin, insertion, actions, nerve supply and clinical anatomy.

1. Respiratory System

- a. Bronchial tree and lungs with their clinical aspects.
- b. Respiratory tract: nasal cavity, pharynx, larynx, trachea, bronchial tree.
- c. Pleura with its clinical aspects.
- d. Diaphragm.

2. Digestive system

- a. Organs of digestive tract (alimentary tract) with their clinical aspects.
- b. Digestive glands: liver, spleen and pancreas.
- c. Description of peritoneum with its clinical aspects.

3. Urinary System

Urinary tract: kidney, ureter, urinary bladder and urethra with their clinical aspects.

4. Reproductive system

- a. Male Reproductive system: reproductive organs, tract and glands (prostate and seminal vesicles) with their clinical aspects.
- b. Female reproductive system: reproductive organs, tract and glands with their clinical aspects.

5. Endocrinology

Definition, classification & description of endocrine glands (pituitary, thyroid, parathyroid, thymus and suprarenal glands) with clinical aspects.

PART B**50 marks****6. Nervous System**

Nervous system: definition, classification and its importance. Description of brain and spinal cord.

Description of peripheral nervous system: cranial and spinal nerves, nerve plexuses, and autonomic nervous system, formation and circulation of cerebrospinal fluid and blood supply of brain and spinal cord.

7. Sensory organs

Description of structures of eye, ear, nose, tongue and skin with their clinical aspects.

8. Surface and radiological anatomy

a. Study of radio-imaging of limbs, abdomen, pelvis and vertebral column with its clinical application.

b. Surface anatomy of thoracic and abdominal viscera.

PRACTICAL**100 marks****Teaching hours: 180****Content of practical**

1. Practical study of bones
2. Practical study of organs
3. Practical study of surface and radiological anatomy.
4. Shavavichhedana – detailed dissection of the whole body.
5. Practical study of location of marma
6. Demonstration of histology slides (10 slides)

Distribution of marks

1. Spotting	20 marks
2. Dissected organs and histology slides	20 Marks
3. Bones, joints, marma	20 Marks
4. Surface & radiological anatomy	10 Marks
5. Practical records	10 Marks
6. Viva-Voce	20 Marks
Total	100 Marks

Reference Books:-

BrihatShariramVaidyaratna-	P.S. Varrier
AbhinavaShariram-	AcharyaDamodar Sharma Gaur
ManavaSharir (Revised Edition)-	Prof. DinkarGovindThatte
ManavaBhrunaVigyana -	Prof. DinkarGovindThatte
ManavaAngaRekhankanVikrian -	Prof. DinkarGovindThatte
SharirRachanaVigyan (English)-	Vaidya P.G.Athawale
Manual of Practical Anatomy Cunnigham Practical ManualVol-1, Vol-2, Vol-3	
Clinical Anatomy in Ayurveda -	Prof.D.G.Thatte&Prof.Suresh Chandra
SharirRachnaVigyan (English)-	Prof. D.G. Thatte
Ayurvedic Human Anatomy -	Prof. Dr. Giridhar M. Kanthi
Regional Anatomy -	B. D. Chaurasia
RachanaSharirVigyana -	Dr. Mahendra Sing
relevant chapters of Brihtrayee and Laghuthrayee	
Gray's Anatomy	
Text Book of Human Anatomy-	Inderbir Singh
Clinical Anatomy-	Richard S Snell
Fundamentals of Human Anatomoy-	Dr. Chakraborty
Human Osteology -	Poddar

TEACHING MODULE FOR RACHANA SAREERA

Number of papers - 2 Total number of hours - 180 Max.marks - 2x 100 = 200		
1 PART A & B Marks allotted- 100		PAPER-
Number of units-5		Hours -80

Unit-1 SHARIROPAKRAMANIYA SHAARIRA, PARIBHASHA SHAARIRA & ANATOMICAL TERMINOLOGIES

Sl.no	Name of topic	Minimum points to cover	Hrs	Marks
1.	Sharira and shaarira vyakhya	Definition of Sharira given in Su. Sam. Sha. 5/3 Definition of Sharira given in Ca. Sam.sha. Definition of Shaarira in As.Hr.sha 6/73, Ca.Sam. Sha 8/94	8 hrs	15
2.	Shadangatvam Angapratyanga vibhaga- (may to know)	Su.Sam.Sha.5/3 As.Hr.Sha.3/1 Su. Sam. Sha. 5/4- may to know		
3.	Definition and branches of Anatomy Shaarira shastra vibhaga	Principles of Anatomy and Physiology by Gerard J. Tortora Rachana Shaarira vijnan by Publications Division, Govt. Ayurveda College, Thiruvananthapuram		
4.	Mritha sharira samshodana Preservation methods of cadaver	Su.Sam.Sha 5/47-50 Shaarira Rachana Vijnan by Tara Chand Sharma- Chapter 1		
5.	Shaarira gyana prayojana	Su.Sam.Sha 5/51		
6.	Constitution of purusha according to dhatubheda, Karma purusha Panchabhautikatvam & Trigunatmakatvam Tridoshamayatvam & Doshadhatumala-mulakatvam	Ca. Sam. Sha 1/15-16 Su. Sam. Sha 1/16 Ca. Sam. Sha 1/63-65 Su Sam.Sha 1/18-19 As. Hr. Sha 3/3-8 As. Hr. Su. 11		
7.	<u>Paribhasha shaarira</u> Kurcha, kandara,jala, asthisanghata, seemanta, seevani, rajju, snayu	Su. Sam. Sha 5/11-17, 29-36 As. Hr. Sha 3/15-17		
8.	<u>Anatomical terminologies</u> Anatomical position, Planes, Explanation of Anatomical terms related to skin, fasciae, bones, joints and their movements, muscles, ligaments, tendons, blood vessels, nerves	Cunningham's Manual of Practical Anatomy, Vol-1- general introduction Principles of Anatomy and Physiology by Gerard J. Tortora		

Unit-2 GARBHA SHAARIRA, EMBRYOLOGY & PRAMANA SHAARIRA

Sl.no	Name of topic	Minimum points to cover	Hrs	Marks
1.	Garbha definitions	Ca. Sam. Sha 4/4,5 Su. Sam. Sha 5/3 As.Hr.Sha.1/1	20 hrs	20
2.	Explanation of shukra and artava (shudha and dushta)	Ca. Sam. Sha 2/3 Su. Sam.Sha 2/11,17 Su.sam.Sha 3/3,10 As.Hr.Sha 1/7,17-18 Su.Sam.Sha 2/3-5 As.Hr.Sha 1/10-12		
3.	Garbhadana	As.Hr.Sha.1/1 Ca.sam.Sha 3/2 Ca.sam.Sha 4/3 Su.Sam.Sha 3/4		
4.	Role of tridosha and panchamahabhuta in fetal development	Su. Sam. Sha 5/3		
5.	Beeja, beejabhaga, beejabhagavayava Laws of heredity	Ca. Sam.Sha 3/25, 4/29,30 Essentials of Human embryology by A.K.Datta		
6.	Linga vinischaya Sex determination and differentiation	As.Hr Sha 1/5 Su. Sam. Sha 3/5 A concise Physiology by Chowdhary		
7.	Masanumasika garbha vridhhi krama Monthwise development of embryo	Su. Sam.Sha 3/18,30 As.Hr.Sha 1/36-66 Human embryology by Inderbir Singh		
8.	Garbhottpadakabhavas	Su. Sam. Sha 2/33		
9.	Garbha vridhikarabhavas	Ca.Sam. Sha 4/26		
10.	Garbhaposhana Apara nirmana Nabhi nadi nirmana Foetal circulation Placenta and umbilical cord formation	Su. Sam. Sha 3/31, 4/24 As. Hr. Sha 1/51,52,55 A concise Physiology by Chowdary Human embryology by Inderbir Singh		
11.	Definitions and branches of Embryology	Essentials of Human embryology by A.K.Datta		
12.	<u>Pramana shaarira</u> Anguli pramana	Ca. Sam. Vi.8/117 Su. Sam.Su.35/12(desirable to know)		
13.	Anga pratyanga utpatti- (may to know)	Su. Sam.Sha. 4/25-31 Human embryology by Inderbir Singh		

Unit-3 ASTHI SHAARIRA, OSTEOLOGY, SANDHI SHAARIRA, ARTHROLOGY, Peshi SHAARIRA & MYOLOGY

Sl.no	Name of topic	Minimum points to cover	Hrs	Marks
1.	Asthi vyakhya Number of asthi Types of asthi Asthi swarooma and pradhanya-(desirable to know) Vasa Meda Majja	As. Sam. Su. 1/13 Su. Sam Sha 5/18- desirable to know Su. Sam Sha 5/19- nice to know Su.Sam.Sha 5/20 Su.Sam.Sha 5/21-23(desirable to know) Su. Sam. Sha 4/13 Ca.Sam. Vi. 5/10 Su. Sam. Sha 4/12 As. Sam. Sha. 5/49	5 hrs (theory)	28
2.	Definition of bone Ossification Structure of bones- macroscopic and microscopic Classification of bones <u>Description of following bones with their clinical aspects:</u> Scapula, clavicle, humerus, radius, ulna(must to know) Bones of hand(desirable to know) Hip bone, femur, tibia, fibula, patella(must to know) Bones of foot(desirable to know) Ribs, sternum, vertebrae, sacrum, coccyx and pelvis (must to know) Cranial bones- frontal, occipital, parietal, temporal, sphenoid, ethmoid (must to know) Facial bones-maxilla, mandible (must to know) Nasal, Zygomatic, Palatine, Lacrimal, Inferior nasal conchae, vomer- (desirable to know)	Hand book of osteology by S.Poddar	60 hrs (practical)	
3.	Sandhi vyakhya Number of sandhis(desirable to know) Types of asthi sandhis- structural and functional	Su.Sam.Sha 5/28 Su.Sam.Sha 5/26(desirable to know) Su.Sam.Sha 5/25,27		
4.	Definition of joints Structure, types and movements	B D Chaurasia's handbook of General Anatomy Principles of Anatomy and Physiology by Gerard .J.		

	<p><u>Description of following joints with their clinical aspects:</u> Lower limb: Hip joint, knee joint, ankle joint Upper limb: Shoulder joint, elbow joint, wrist joint Vertebral joints and temporomandibular joint(desirable to know)</p>	<p>Tortora B D Chaurasia's Human Anatomy 3 volumes</p>		
5.	<p>Peshi vyakhya and importance Structure and types of peshis Number of peshis</p>	<p>Su. Sam. Sha. 5/38- Dalhana commentary, Su. Sam. Sha.4/29 Su.Sam.Sha 5/40 Su.Sam.Sha 5/37,39</p>		
6.	<p>Structure and types of muscles</p> <p><u>Description of following muscles:- their origin, insertion, nerve supply, action and clinical anatomy:</u> Sternocleidomastoid Pectoralis major & minor, Serratus anterior Anterior Abdominal wall muscles Diaphragm, Trapezius, Latissimus dorsi, , Deltoid, Coracobrachialis, Triceps brachi, Biceps brachi, Brachialis Gluteus maximus, medius and minimus, Psoas major Sartorius, Adductor magnus, Tensor fascia lata, Hamstring muscles Gastronemius, Soleus, Tibialis anterior and posterior Muscles of mastication <u>Descriptive study of following</u> : Axilla Cubital fossa Femoral triangle Fascia lata and its modifications Adductor canal Popliteal fossa</p>	<p>Principles of Anatomy and Physiology by Gerard .J. Tortora B D Chaurasia's handbook of General Anatomy</p> <p>B D Chaurasia's Human Anatomy 3 volumes Clinical anatomy by regions- Richard. S. Snell</p>		

**Unit-4 SIRA, DHAMANI, SROTUS SHAARIRA, KOSHTA EVUM ASHAYA SHAARIRA & KALA
SHAARIRA, CARDIOVASCULAR AND LYMPHATIC SYSTEMS**

Sl.no	Name of topic	Minimum points to cover	Hrs	Marks
1.	<p>Definition of sira and dhamani Types of siras and dhamanis and their number</p> <p>Functions and lakshanas of the four types of siras, General Lakshana and number of avedya siras (desirable to know)</p> <p>Description of hridaya</p> <p>Definition of srotus</p> <p>Types of srotuses and their moolavidha lakshanas</p> <p>Srotomula</p>	<p>Ca. Sam.Su 30/12 Su. Sam.Sha. 7/3,6,7,16, As. Hr. Sha 3/18-19,33-34,36-38 Su. Sam.Sha 9/3,4</p> <p>Su. Sam.Sha. 7/8-15,18-21</p> <p>Su. Sam.Sha.4/31-32 As. Hr. Sha 3/18 Su. Sam.Sha. 9/13 As. Hr. 3/40-48 Su. Sam.Sha. 9/12, 5/6 Ca. Vi. 5th chapter</p> <p>“Mulamithi prabhava sthaanam”- Chakrapani definition Su. Sam.Sha. 9/13</p>	35 hrs	25
2.	<p>Definition of koshta</p> <p>Koshtangas</p> <p>Types and description of ashayas</p>	<p>Su. Sam. Chi.2/12 As. Hr. Su 12/43 Ca. Sam. Vi.5/9 Ca. Sam. Sha7/12 As. Hr. Sha 3/13 As. Hr. Sha 3/10-11 Su. Sam. Sha 5/8 -Dalhana commentary</p>		
3.	Kalaa- definition and types	<p>Su. Sam. Sha. 4/5-23 As. Hr. Sha. 3/9-10</p>		
4.	Lasika- as the stana of pitha dosha	<p>As.Hr. Su 12/2-Ayurveda Rasayanam commentary</p>		
5.	<p>Lymphatic system- definition Components of Lymphatic system</p> <p>Types and structure of lymph vessels and glands Thoracic duct and right lymph duct Clinical Anatomy of lymphatic system</p>	<p>B D Chaurasia’s handbook of General Anatomy</p> <p>Textbook of human histology by Inderbir Singh Cunningham’s Manual of Practical Anatomy Vol 2,3 B D Chaurasia’s Human Anatomy Vol 1 B D Chaurasia’s handbook of General Anatomy Clinical anatomy by regions- Richard. S. Snell</p>		
6.	Definition, types and structure of arteries and veins	<p>B D Chaurasia’s handbook of General Anatomy Textbook of human histology by Inderbir Singh</p>		

	<p><u>Description of heart</u> Definition, External features, Surface marking of borders, Fibrous skeleton, Musculature, detailed explanation of four chambers, Valves of heart, conducting system, arteries supplying heart, veins draining, lymphatics, nerve supply and clinical anatomy</p> <p><u>Description of following vessels with their course, branches and clinical aspects</u></p> <p>1. <u>Arterial system</u>- study of following arteries: Aorta and its branches, Common carotid and branches, Subclavian, Axillary, Brachial, Radial and Ulnar arteries Common iliac artery and branches Femoral, popliteal, Tibial arteries Superficial and deep arches Circle of Willis</p> <p>2. <u>Venous system</u>: Superior and inferior venacava and their tributaries Veins corresponding to above mentioned arteries Superficial veins of upper and lower limbs Portal venous system</p>	<p>B D Chaurasia's Human Anatomy Vol 1</p> <p>B D Chaurasia's Human Anatomy Vol 1, 2 and 3 Clinical anatomy by regions- Richard. S. Snell</p>		
7.	<p>Pericardium- definition, parts, contents, sinuses and arterial and nerve supply Clinical aspects of pericardium Mediastinum</p>	<p>B D Chaurasia's Human Anatomy Vol 1</p> <p>Clinical anatomy by regions- Richard. S. Snell</p>		

Unit-5 UTTAMANGIYA SHAARIRA, MARMA SHAARIRA & INDRIYA SHAARIRA

Sl.no	Name of topic	Minimum points to cover	Hrs	Marks
1.	Shatchakra, ida, pingala and sushumna nadi	Kriya shaarira Vijnan by Ram Sunder Rao	12 hrs	12
2.	<p><u>Marma shaarira</u></p> <p>Definition of marma</p> <p>Number of marma</p> <p>Classification of marma</p> <p>Location, pancha vidha bhedas, clinical importance of all marmas</p> <p>Dimensions of marmas</p> <p>Importance of marmas (desirable to know)</p> <p>Pancha vikalpa of marmas, their number and types, bhoutik constitution, time period of death or deformity in 5 types of marma and lakshanas of injury (desirable to know)</p> <p><u>Explanation of tri marma</u></p> <p>Division of marmas into sakhasritha and skandasritha</p> <p>Importance of tri marma</p> <p>Clinical importance of tri marma- (desirable to know)</p>	<p>Su. Sam Sha 6/15,35</p> <p>As. Hr. Sha 4/37-39</p> <p>As. Hr. Sha 4/1</p> <p>Su. Sam. Sha 6/4,5,8</p> <p>Su. Sam. Sha. 6/3,5, 8</p> <p>As. Hr. Sha 4/2-36, 40-51</p> <p>As. Hr. Sha 4/60-62</p> <p>Su. Sam. Sha 6/18-20, 30-35, 42-43</p> <p>Su. Sam. Sha 6/8,16,17, 22, 23,36-40</p> <p>As. Hr.Sha. 4/52-59</p> <p>Ca. Sam. Si.9/2</p> <p>Ca. Sam. Si.9/3-4</p> <p>Ca. Sam. Si.9/5-8</p>		
3.	<p>Definition of indriya</p> <p>Formation and types of indriya and their explanation</p> <p>Indriya artha</p> <p>Indriya adhistana</p>	<p>Ca. sam. Su.8/3,7,8</p> <p>Su. Sam. Sha. 1/4</p> <p>Ca. Sam. Su.8/11</p> <p>Su. Sam. Sha 1/5,15</p> <p>Ca. Sam. Su. 8/10</p>		

MODULE FOR RACHANA SAREERA

Number of papers - 2	Each paper subdivided in to two parts
Total number of Hrs.-180	Marks 2 x 100 = 200

PAPER -II PART-A		
Number of Units: 4	Hrs. 53	Marks: 50

Unit 1 Respiratory system

Hrs. 12

Marks: 10

1	Respiratory system	Introduction	
2	Nose	External nose – nasal cavity – nasal septum – lateral wall – mucosa (must know) Blood supply & nerve supply (desirable to know)	
3	Para nasal sinuses	Introduction - features of frontal, maxillary, sphenoidal, ethmoidal sinuses – C/A (must know)	
4	Larynx	Introduction – situation – extent – size – cartilages – cavity – vocal folds - name of intrinsic muscles & ligaments (must know) Movements of vocal folds blood and nerve supply C/A (desirable to know)	
5	Trachea	situation – extent – size – course – important relations - (must know) Histology – blood & nerve supply C/A (desirable to know)	
6	Right & left bronchi	Extra pulmonary & intra pulmonary parts, distribution	
7	Right & left Lungs	Introduction – situation – shape – colour – weight – external features - relations – hilum – differences between two lungs – bronchial tree – broncho pulmonary segments – blood & nerve supply – lymphatic drainage – Histology - C/A (must know)	
8	Pleurae	Introduction – 2 layers – cavity – recesses – vessels – nerve supply – C/A (must know)	
9	Diaphragm	Definition – origin – insertion – innervations – action – major openings – C/A (must know)	1

Unit 2 Digestive system
Hrs. 20 Marks: 15

a) Organs of digestive tract and their clinical aspects

1	Mouth	Oral cavity –gums – teeth –palate (must know) Name and nerve supply of muscles of soft palate (desirable to know)		
2	Tongue	Introduction – external features – papillae – name of extrinsic & intrinsic muscles - Blood supply & nerve supply - C/A (must know)		
3	Pharynx	Introduction – dimensions – boundaries – parts – Waldeyer’s lymphatic ring – structure – name and nerve supply of muscles (must know) Blood supply, nerve supply, lymphatic drainage (nice to know)		
4	Oesophagus	Introduction – extent – parts –dimensions – curvatures – constrictions – main relations – (must know) Blood & nerve supply, lymphatic drainage, histology - C/A (desirable to know)		
5	Stomach	Introduction – location – size, shape, position – external features – relations – blood & nerve supply, lymphatic drainage, nerve supply – histology, C/A (must know)		
6	Small intestine	Introduction - Extent – length – parts – relevant features. Duodenum – location – length – parts – course & relations of each part Jejunum & ileum – Introduction - extent – length – differences between two (must know) Blood & nerve supply, lymphatic drainage, histology, C/A (desirable to know)		
7	Large intestine	Introduction - Relevant features - extent – length – parts – gross anatomy of each part (must know) Blood & nerve supply, lymphatic drainage, histology, C/A (desirable to know)		

b) Digestive glands

1	Liver	Introduction – location – external features – relations – lobes - ligaments - blood & nerve supply – histology – C/A (must know) lymphatic drainage, hepatic segments functions (nice to know) Extra hepatic biliary apparatus (must know)		
2	Spleen	Introduction – location – position - size & shape - external features – relations – blood supply - histology (must know)		

		Nerve supply, lymphatic drainage, function, C/A (desirable to know)		
3	Pancreas	Introduction – location – size & shape - parts - external features – relations – ducts - blood supply (must know) Nerve supply, lymphatic drainage, functions, - histology, C/A (desirable to know)		
4	Salivary glands	Brief description of Gross anatomy of parotid, submandibular and sublingual glands (must know)		

c) Peritoneum with its clinical aspects

1	Peritoneum	Introduction – divisions – folds – cavity – functions – greater omentum – lesser omentum – Mesentery – mesoappendix – mesocolon – epiploic foramen – lesser sac - C/A (must know)		
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Unit 3 Urogenital system

Hrs. 6 Marks : 20

a) Urinary system

1	Kidneys	Introduction – situation - extent – size - shape – colour – weight – external features - relations – capsules – internal structure – histology - blood supply - Nerve supply, lymphatic drainage, C/A (must know)		
2	Ureters	Definition – dimension – parts – course – constrictions – main relations (must know) Nerve supply, lymphatic drainage, histology, C/A (nice to know)		
3	Urinary bladder	Introduction - situation - shape - – external features – relations – ligaments – interior – capacity (must know) Blood & nerve supply - lymphatic drainage – histology – C/A (desirable to know)		
4	Urethra	Male – definition – extent – course – parts dimension – sphincters - Female - extent – course – length (must know) Blood & nerve supply - lymphatic drainage (nice to know)		

b) Male Reproductive organs

Hrs 11

1	External genital organs	Introduction – Penis – parts with description – coverings – ligaments (must know) Blood & nerve supply - lymphatic drainage – mechanism of erection (nice to know) Scrotum – Introduction – coverings - Blood & nerve supply – lymphatic drainage – C/A (must know)		
2	Internal genital organs & tract	Testis – Introduction – dimension – shape, weight, situation, external features – coverings – histology - Blood & nerve supply - lymphatic drainage Epididymis – ductus deferens – ejaculatory ducts - spermatic cord – C/A (must know)		
3	Glands	Prostate – situation - shape, size, weight, external features – lobes – coverings -C/A (must know) Blood & nerve supply – lymphatic drainage, age related changes (nice to know) Seminal vesicles , bubo urethral glands (desirable to know)		

c) Female reproductive organs

1	External genital organs & mammary gland	Name, situation and brief explanation of each & gross anatomy of mammary gland		
2	Internal genital organs & tract	Ovaries - Introduction - situation - shape -size - weight – colour - external features – relations– histology - Blood & nerve supply - lymphatic drainage (must know) Uterine tubes - Introduction - situation – dimension – subdivisions – course & relations - Blood & nerve supply - lymphatic drainage – C/A (must know) Uterus - - Introduction - situation – shape, size, weight –normal position & angulations – subdivisions - external features – relations – ligaments – supports - Blood & nerve supply - lymphatic drainage – C/A (must know) Histology – changes with age (nice to know) Vagina - Introduction – situation - extent - direction – size & shape – fornices - relations (must know) Blood & nerve supply - lymphatic drainage (nice to know)		

Unit 4 Endocrinology

Hrs. 4 Marks: 5

1	Endocrine glands	Definition, classification		
2	Pituitary gland	Introduction - situation - shape -size - weight - relations - subdivisions - Blood supply (must know) Histology, hormones (nice to know)		
3	Thyroid gland & Parathyroid glands Thymus	Introduction - situation - extent - dimension, weight - capsules - external features - relations - Blood & nerve supply - lymphatic drainage - C/A (must know) Histology and function (nice to know) Description of Parathyroid glands & Thymus (must know)		
4	Suprarenal glands	Introduction - situation - shape -size - weight - external features -blood vessels (must know) Nerve supply - lymphatic drainage - histology , C/A (nice to know)		

PAPER -II PART-B

Number of Units: 2

Hrs. 47

Marks: 50

Unit-I Nervous system

Hrs. 37 Marks: 38

Sl. No.	Name of Topic	Extent of study	Marks
1	Nervous system	Introduction -Divisions - Parts of brain - Cellular components , Neuron - Structure & classification, Neuroglia cells - Types (Must know)	
2	Meninges	Introduction - Dura mater - Folds of , Arachnoid mater, Pia mater- Extra dural - Sub dural & Sub arachnoid spaces (Must know) Cisterns - Communications (desirable to know)	
3	Cerebrospinal fluid	Introduction - formation - Circulation - Absorption- Functions (Must know), C/A	
4	Spinal Cord	Introduction - Meningeal coverings - Enlargements - Cauda equina - External features- Internal structure Spinal nerves - number and classification - Structure of a typical spinal nerve - Spinal segment Nuclei of spinal cord -introduction - nuclei in ant.	

		<p>horn, lat. horn, post. horn.</p> <p>Tracts of the SC-definition – name of descending (pyramidal and extra pyramidal) and ascending tracts – origin, course, termination and functional significance of pyramidal tract (must know), C/A</p> <p>Laminar organization in SC. & Sensory receptors origin, course, termination and function of other tracts (nice to know)</p>	
5	<p>Brain stem</p> <p>Medulla oblongata</p> <p>Pons</p> <p>Midbrain</p>	<p>Introduction –external features – internal structure – T.S. through the pyramidal decussation (must know)</p> <p>T.S. through the sensory decussation (desirable to know)</p> <p>T.S. through the upper part of Medulla (nice to know)</p> <p>Introduction –external features – internal structure of Pons – basilar part (must know)</p> <p>Tegmentum in the lower and upper parts (desirable to know)</p> <p>Introduction – Subdivisions – internal structure (must know) , C/A</p>	
6	Cerebellum	<p>Introduction –external features – parts – subdivisions – grey matter – functions, (must know) C/A</p> <p>Morphological and functional divisions – connections – histology (desirable to know)</p>	
7	Fourth ventricle	<p>Introduction –lateral boundaries – floor –roof – communications – recesses</p> <p>Parts and common features of the floor, C/A (desirable to know)</p>	
8	Cerebrum	<p>Introduction –External features and lobes of cerebral hemisphere – sulci & gyri -functional areas (must know), C/A</p>	
9	Diencephalon	<p>Introduction – Thalamus – definition – external features, Hypothalamus – introduction – boundaries – parts -functions (must know)</p> <p>Structure and nuclei of thalamus, nuclei of hypothalamus, metathalamus,epithalamus, subthalamus (desirable to know), C/A</p> <p>Connections and functions of thalamus, important connections of hypothalamus (nice to know)</p>	
10	Basal nuclei	<p>Introduction – caudate nucleus – lentiform nucleusamygsaloid body – claustrum (must know), C/A</p> <p>Connections and functions of corpus striatum (nice to know)</p>	
11	White matter of cerebrum	<p>Introduction – 3 types</p> <p>Corpus callosum – parts – fibres – functional significance</p> <p>Internal capsule – gross anatomy – blood supply, C/A (must know)</p>	

		Fibers of internal capsule (nice to know)	
12	Third ventricle	Definition –communication – recesses – boundaries (must know)	
13	Lateral ventricle	Definition – central part – boundaries, 3 horns - boundaries (must know)	
14	Limbic system	Introduction – parts – functions (nice to know)	
15	Neural pathways & reticular formation	Taste pathway (desirable to know) Pathway of pain, temperature, touch and reticular formation (nice to know)	
16	Blood supply of spinal cord and brain	Blood supply of spinal cord Arteries of brain-circle of Willis –branches Veins of cerebrum – external and internal cerebral veins (must know) Blood supply of brain stem (must know) Blood brain barrier (nice to know)	
17	Peripheral nervous system	Cranial nerves - Introduction – number, name location, and function Visual pathway, Fifth cranial nerve, Seventh CN, Auditory pathway (must know), C/A First CN, Ninth CN, Tenth CN (desirable to know) Nucleus, course and distribution of other CNs (nice to know) Spinal nerve plexuses – brachial, lumbar, sacral plexuses (must know) Origin, course and distribution of Median, Ulnar, Radial, Axillary, Musculo cutaneous, Sciatic, common peronial, Tibial, Femoral nerves , C/A (must know)	
18	Autonomous nervous system	Introduction – sympathetic NS , parasympathetic NS	

Unit - 7 Sensory organs
Hrs. 10 Marks 12

1	Eye	Introduction – 3 coats –lacrimal apparatus – name and nerve supply of extra ocular muscles(must know) Histology of cornea, aqueous humour, lens, vitreous body, C/A (nice to know)	
2	Ear	Introduction – external ear, - auricle, ext. acoustic meatus, tympanic membrane, Middle ear – boundaries and contents - ear ossicles – muscles, Internal ear- bony labyrinth, membranous labyrinth (must know) C/A Blood supply & nerve supply of each part (nice to know)	
3	Skin	Introduction – structure of skin and its derivatives Concept of twak shaarira in Ayurveda- Su. Sam. Sha	

PRACTICAL

100 marks
Teaching hours-180

1. Practical study of bones- as described in the module Unit 3

2. Practical study of organs

Brain (3 sections desirable), meninges, heart, lungs, larynx & trachea, stomach, small intestine, large intestine, liver, pancreas, spleen, Kidney, ureter, urinary bladder, uterus with associated structures

3. Practical study of surface and radiological anatomy

S A of heart, right and left lungs, stomach, liver, right and left kidneys
R A of joints of upper and lower limbs and vertebral joints

4. Shava vichhedana

Detailed dissection of whole body

5. Practical study of location of marma- as described in the module Unit 5

6. Demonstration of histology slides (10 slides)

1. Tissues (four types)
2. Artery/vein
3. Stomach/small intestine/large intestine
4. Lymph gland/ spleen
5. Lung/trachea
6. Kidney/ureter
7. Testes/ovary
8. Cerebellum/spinal cord
9. Liver/pancreas
10. Tongue with papillae/oesophagus

Distribution of marks

1. Spotting – Dissected cadaver spotting - 20 marks
2. Dissected organs and histology slides– 20 marks
3. Bones, joints, marma -20 marks
4. Surface and radiological anatomy- 10 marks
5. Practical record – 10 marks
6. Viva voce – 20 marks

Practical record book

Part I osteology

1. Typical thoracic vertebrae (lateral aspect)
2. Sternum (anterior aspect)
3. Scapula (Dorsal aspect)
4. Humerus(Anterior aspect)
5. Radius&Ulna(Anterior aspect)
6. Hipbone(Lateralaspect)
7. Femur(Anterioraspect)
8. Tibia&Fibula(Anterioraspect)
9. Skull(Anterioraspect)
10. Skull(inferioraspect)

PART 11 ORGANS

1. Lungs(Medial surface)
2. Heart(Anterior surface)
3. Liver(posterior aspect)
4. Kidney(Coronal section)
5. Uterus&Assosciated structures(posterior aspect)
6. Brain(Medial aspect)
7. Base of Brain(Inferioraspect)

PART111 MICROANATOMY(Histological slides)

- 10 Histological slides as given above.

1.5 MaulikSiddhantavumAshtangHridaya

(Basic Principles and AshtangHridaya- An ancient text of Ayurveda)

**Theory- One Paper- 100 marks
Teaching Hours -120 hours**

Part A

60 marks

AshtangHridayaSutrasthanaAdhyaya 1 to 15

Part B

40 marks

1. AshtangHridayaSutrasthanaAdhyaya 16 to 30
2. Description of AshtaPrakriti
3. ShastraLakshan (Tantra), Tantraguna, Tantradosha, Tachitalya, Arthasraya, Kalpana

Reference Books:

1. AstangHridaya : Hindi commentary by LalchandaVaidya
2. AstangHridaya : Hindi commentary by Vd. B.L. Gaur
3. AstangHridaya : English commentary by Dr. T. Sreekumar
4. AstangHridaya : English commentary by Dr. Vishwavasudhar Gaur
5. AstangHridaya : Sanskrit commentary by Hemadri
6. AstangHridaya : Sanskrit commentary by Arunadatta

TEACHING MODULE FOR
MAULIKASIDHANTA EVUM ASHTANGAHRIDAYA SUTRASTHANA

Total number of papers	: 1
Total marks	: 100 (only theory)
Part A	– 60 marks
Part – B	– 40 marks
Total number of hours	: 120 hrs

Suggestions:

1. The chapters in AH can be divided into three categories
 - a. Chapters for detailed study - (7 in number) - 1, 9-14 (7 chapters)
 - b. Chapters for non-detailed study – chapters 2-8, 15-20 (13 chapters)
 - c. Chapters for introductory study – chapters 21-30 (10 chapters)
2. Chapters for detailed study – may be taught in detail covering all the *slokas*
3. Chapters for non-detailed study – selected portions (slokas) of the chapter may be taught (portions specified below)
4. Introductory study – just mentioning the definition, types and numbers of those mentioned in these chapters. No need of studying sloka. Classes may be based on prepared notes (notes may be prepared by conducting a workshop)
5. Question pattern
 - a. Essay questions may be asked only from chapters for detailed study.
 - b. Non detailed chapters – brief description & short answers can be asked
 - c. Introductory study chapters – short answers only

PART A

Content: Ashatgahridaya - Chapters 1 to 15

Chapter division:

- | | |
|---------------------------------------|------------------------|
| 1. Chapters for detailed study | : 1, 9-14 (7 chapters) |
| 2. Chapters for non detailed study | : 2-8, 15 (8 chapters) |
| 3. No chapters for introductory study | |

Number of hours – 72 hrs

Marks – 60

Pattern of study

Category	Chapter No	Chapter Name	No of Hrs	Max marks
Chapters for Detailed study (7 chapt.)	1	Ayushkameeya	9	20
	9	Dravyadivijnaneeya	8	
	10	Rasabhedeeya	9	
	11	Doshadivijnaneeya	9	27
	12	Doshabhedeeya	9	
	13	Doshopakramaneeya	9	
	14	Dvividhopakramaneeya	7	
Chapters for non-detailed study (8 chapt)	2	Dinacharya	2	5
	3	Ritucharya	2	
	4	Roganulpadaneeya	2	
	5	Dravadravyavijnaneeya	2	8
	6	Annasvaroopavijnaneeya		
	7	Annarakshavidhi	1	
	8	Matrasiteeya	1	
	15	Sodhanadigana	1	

PART B

Content

1. Ashatgahridaya - Chapters 16 to 30
2. Description of Ashtaprakriti
3. Sastraakshana, Tantraguna, Tantradosha, Tachilya, Arthasraya, Kalpana

Chapter division:

1. No Chapters for detailed study.
2. Chapters for non detailed study – 16-20 (5 chapters)
3. Chapters for introductory study – 21 – 30 (10 chapters)

Number of hours – 48 hrs

Marks – 40

Pattern of study

Category	Chapter No	Chapter Name	No of Hrs*	Max marks*
Non-detailed study	16	Snehadhyaya	3	5

(5 chap.)	17	Svedadhyaya	3	5
	18	Vamanavirechana adhyaya	3	
	19	Vastividhi adhyaya	3	
	20	Nasyavidhi adhyaya	3	
Introductory study	21-30		10	20 (2 marks each)
Maulikasidhanta	Description of Ashtaprakriti		5	5
	Sastrakshana, Tantraguna, Tantradosha, Tachilya, Arthasraya, Kalpana		5	5

Portions for non-detailed study

Sl No	Chapt No	Chapt Name	Portions	No of Hrs
1	2	Dinacharya	Concept of Brahmamuhurta, Dantadhavanavidhi, benefits of Abhyanga, snana, vyayama, five important regimens included under sadvritta	2
2	3	Ritucharya	Name of shad ritus, division into uttara/dakshina ayana (adana/visargakala), characteristics of both Ayanas, three do's/dont's in each ritu	2
3	4	Roganulpadaneeya	Vega – concept & classification, list of dharaneeya & adharaneeya vega, complications and treatment of vegarodha mootra, puresha & adhovata, importance of sodhana, definition of agantu roga, general prevention of diseases (roganutpatti)	2
4	5	Dravadravyavijnana	General qualities of ksheera, Jala, Dadhi, Takra, Ghrita, Madhu & Taila	2
5	6	Annasvaroopo	Contents of Mamsavarga, Content and general properties of Triphala, trikatu, chaturjata, panchakola, dasamula	
6	7	Annaraksha	Viruddhahara – definition and examples,	1

			tryopastambha – concept & importance of each upastambha	
7	8	Matrasiteeya	Importance of Matra of food, brief description of diseases like alasaka, vishoochika and ajeerna. Concept of anupana with examples.	1
8	15	Sodhanadiganasangraha	Knowledge of drugs in ganas like Bhadradarvadi, Vidaryadi, Guloochyadi, Patolakaturohinyadi & Varanadi	1
9	16	Snehavidhi	Qualities of snehadravya, knowledge of chaturvidhasneha, types of snehapana (introducing achapana & vicharana), samyaksnigdhalakshana, effect of snehana	3
10	17	Sveda adhyaya	Classification of sveda, samyaksvinnalakshana, effect of snehasveda	3
11	18	Vamanavirechanavidhi	Brief introduction to Vamana-virechana (their relation to dosha), brief outline on procedure of both, Peyadikrama and its importance	3
12	19	Vastividhi	Broad classification of vasti, familiarity with instruments & procedure, importance of vasti	3
13	20	Nasya	Importance, types (marsa & pratimarsa), effect of nasya	3

Portions for Introductory study

Note: Teacher should teach these portions based on the note prepared for this purpose.

Sl No	Ch. No	Ch. Name	Essential Portions	No of Hrs
1	21	Dhoomapana	Types, dhoomapanakala	1
2	22	Gandooshadi	Difference between gandusha & kabala, types of gandoosha, types of moordhataila	1
3	23	Aschyotana anjana	Brief idea about the procedure	1
4	24	Tarpana- putapaka	Brief idea about the procedure	1

5	25	Yantravidhi	Definition of yantra, Yantrakarma (sloka no.41)	1
6	26	Sastravidhi	Total number of sastra, qualities of ideal sastra	1
7	27	Siravyadha	Sudharaktalakshana, names of different methods for raktamoksha, visudharaktapurusha lakshana	1
8	28	Salyaharanavidhi	Types of salyagati, antah`salyalakshana	1
9	29	Sastrakarmavidhi	Types of sophra (ama, pachyamana, pakva), role of doshas in sophra (sloka - 6)	1
10	30	Ksharagnikarma	Importance of Kshara, importance of agni (sloka 40) Importance of sootrasthana of Ashtangahridaya (sloka 53)	1

QUESTION PATTERN

Part A (total - 60)

1. Essay questions (10 marks) - 2X10=20
2. Brief description (5 marks) - 6X5=30
3. Short answers (2 marks) - 5X2=10

Part B (total - 40)

1. Brief description (5 marks) - 4X5=20
2. Short answers (2 marks) - 10X2=20

KERALA UNIVERSITY OF HEALTH SCIENCES

1st BAMS TIME TABLE

	9 -10	10 - 11	11 --12	12 -1	2 -3	3-4
Monday	Sanskrit	Rachana	Padartha	Sidhanta	Rachana/ Kriya- Practical	
Tuesday	Sidhanta	Sanskrit	Padartha	Kriya	Rachana/ Kriya- Practical	
Wed	Sanskrit	Kriya	Rachana	Padartha	Rachana/ Kriya- Practical	

Thurs	Padartha	Sidhanta	Kriya	Rachana	Rachana/ Kriya- Practical
Friday	Sanskrit	Rachana	Sidhanta	Kriya	Rachana/ Kriya- Practical
Saturday	Sidhanta	Rachana	Kriya	Padartha	Seminar
