

**MADHYA PRADESH MEDICAL SCIENCE**  
**UNIVERSITY JABALPUR (MP)**

**SYLLABUS OF AYURVEDACHARYA (BAMS) COURSE**

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**2<sup>ND</sup> PROFESSIONAL**

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MPMSU-BAMS SECOND YEAR SYLLABUS

## **2.1 DRAVYAGUNA VIJNAN**

**(PHARMACOLOGY & MATERIA MEDICA)**

**Lectures: 200 Hrs.**

**Practicals: 200 Hrs.**

**Total Marks -400**

**Theory Two Papers– 100 Marks Each**

**Practical/Viva voce – 200 Marks**

**Paper I**

**100 Marks**

**Part A**

**50 Marks**

**1- Dravyaguna Shastra Paribhasa-** Lakshana of Sapta Padartha of Dravyaguna Vijnana viz Dravya- Rasa-Guna- Virya- Vipaka- Prabhava and Karma.

**2- Dravya:**

Etymological derivation, definition, panchbhoutikatwa.

Classification of Dravya according to Samhitas and Nighantus Taxonomical classification.

**3- Guna:**

Etymological derivation, definition and Classification of Guna.

Detailed knowledge of Gurvadi Guna & Paradi gunas.

**4- Rasa:**

Etymological derivation, definition, Meaning of "Rasa" in various contexts. Shad Rasas (Madhura, Amla, Lavana, Katu, Tikta, and Kashaya), Panchabhautik constitution of Rasas, Nirvrittivisheshakrama (manifestation in general and particular), Ritu and shad rasa Rasanurasayoh bheda (Difference between rasa and anurasa), Lakshana (characteristics),Guna and Karma of shad Rasas, Kopana and Shamana of Dosha and dushya by Shad rasas. Effects of excess usage of Rasa. Rasopalabधि, Rasaskandha.

**5- Vipaka:**

Etymological derivation and definition, difference between Avasthapaka and Vipaka, Types of Vipaka, (Dvidha-Trividha,Panchavidha) Guna and karma of Vipaka.

Grades of Vipaka (taratamya), Vipakopalabधि hetu (Factors to determineVipaka).

**6- Veerya:**

Etymological derivation, definition and Swarupa of Virya, Number of Virya.

(Dvidha & Ashtavidha), Panchabhauthikatva

Virya karmani (Effects of Virya), General principles in determination of virya along with exceptions.

**7- Prabhava:**

Definition, Effects of Prabhava.

**8-** Interrelation of Rasa-Guna-Virya-Vipaka-Prabhava with respect to their strength (balabal nirupana). Samanapratyayarabdha and Vichitrapratyayarabdha dravyas.

**9- Karma:**

Lakshana, swarupa and bheda of karma (Definition, nature and types of action).

Explanation of the following Karmas with examples:

- |                 |                |                 |
|-----------------|----------------|-----------------|
| 1. Deepana      | 2. Pachana     | 3. Samshodhana  |
| 4. Samshamana   | 5. Anulomana   | 6. Sransana     |
| 7. Bhedana      | 8. Rechana     | 9. Chhedana     |
| 10. Lekhana     | 11. Grahi      | 12. Sthambhana  |
| 13. Madakari    | 14. Pramathi   | 15. Abhishyandi |
| 16. Vyavayi     | 17. Vikashi    | 18. Rasayana    |
| 19. Vajeekarana | 20. Jeevaneeya | 21. Balya       |
| 22. Brimhana    | 23. Langhana   | 24. Medhya      |

**10.** Brief information on Karmas of dashemani gana of Charak Samhita.

**11- Mishraka Gana:**

11a)- Audbhida Gana (Vegetable origin) Brihatpanchamoola, Laghupanchamoola, Vallipanchamoola, Katakapanchamoola, Trinapanchamoola, Madhyamapanchamoola, Jeevaneeya panchamoola, Panchapallava, Panchavalakala, Triphala, Trikatu, Trimada, Chaturusana, Panchakola, Shadusana, Chaturbeeja, Jeevaniya gana, Ashtavarga, Trijataka, Chaturajataka, Katuchaturjataka Panchatikta, Amlapanchaka, Chaturbhadra, Trikarshika, Swalpatriphala, Madhuratriphala, Mahavisha, Upavisha, Agrya aushadh varga- Knowledge of Agrayaaushadha Varga with example.

11 b)- Jangama Gana (Animal origin)- Ksheerashtaka, Mutrashtaka, Pitta panchaka.

11 c)- Parthiva Gana (Mineral origin) - Lavana Panchaka, Kshara dvaya, Kshara Ashtaka.

**12- Basis of nomenclature:**

Basis of nomenclature of dravya, Basis and Derivation of synonyms.

**13.** Bheeshaja Pariksha vidhi (as described in Charaka samhita vimana sthana 8), Dravya Sangrahana (collection of dravya)- Ecology- Classification of desha (geographical area) and bhumi (soil), swarupa of sangrahaniya dravya of (Nature and quality of drug to be collected). Sangrahana vidhi (Method of collection) -Vegetable and Animal origin drugs according to part used. Period of collection according to virya, samrakshana vidhi (preservation of collected dravyas), bheshajagara (Storehouse), study on different prayojyanga (useful plant parts).

**Part B****50 Marks****(I)****20 Marks**

- 14 a) Concept of dravya shodhan (purification of dravya).  
14 b) Brief knowledge of Apamishran (adulterants)  
14 c) Concept of Abhava pratinidhi dravya (substitutes)

**15-** Prashasta bhesaja (ideal drug), plant extracts. Concept of viruddha Dravya (incompatibility of the dravya).

**16-** Introduction to Nighantu Vigyan - Dhanwantari Nighantu, Bhavaprakashanighantu, Rajanighantu.

**17-** Brief knowledge of cultivation, conservation of medicinal plants and information about endangered species.

**(II)****30 Marks**

**18.** - Introduction, Definition & scope of Pharmacology and Principles of general Pharmacology. Brief Knowledge about pharmacology of the following - Anaesthetics, CNS depressants, Sedatives, Hypnotics, Tranquilisers, Antipyretics, Analgesics, Antiepileptics, Antihypertensive, Antianginal, Antiplatelet, Hypolipidaemic, Haemopoetic, Coagulants, Bronchodilators, Aerosols/ Inhalants, Expectorants, Digestants, Carminatives, Antacids, Antiulcer, Laxatives, Antidiarrhoeals, Antiemetic, Hepatoprotective, Diuretic, Antidiuretic, Lithotriptic, Antiinflammatory, Hormonal therapy, Antiobesity, Antidiabetic, Antithyroid, Oxytocic. Galactagogues, Contraceptives, Styptics, Antihistamines, Antimicrobial, Antibiotics, Antimalarial, Amoebicidal, Antifilarial, Anthelmintic, Antifungal, Vitamins, Minerals, Water imbalance and IV fluids, Vaccines, antivenom, antirabbies serum, Local anti septics, drugs in ophthalmic practice, Anti cancer drugs and immunomodulators.

**Paper II****100 Marks****Part A****70 marks****1-Detailed Knowledge of Following Dravya –**

- 1- Detailed knowledge of following drugs with respect to Basonym of drug, Main Synonyms, Regional Name, Botanical Name, Family, Classification of Dravya (Gana) as described in Charak and Sushrut, External morphology, Useful parts, Important phytoconstituents, Rasa panchaka, Action on Dosha, Dhatu, Mala, Prayogarha vyadhi (therapeutic indications), Amayikaprayoga and Matra (Therapeutic administration and Dose), Vishishta yoga (names of important formulations), Vishakta Lakshan (adverse effects), Chikitsopachara (remedial measures) and Shodhana (as required)

[Alphabetical order and Botanical names to all the drugs are to be added]

Agaru	Guggulu	Pashanabheda
Agnimantha	Haridradvaya	Patala
Agnimantha	Haritaki	Pippali-Pippalimula
Ahiphena	Hingu	Prishniparni
Amalaki	Jambu	Punarnava
Apamarga	Jatamansi	Pushkarmoola
Aragvadha	Jatiphal	Rasna
Aragvadha	Jeerakadvaya	Rasona
Ardraka-Sunti	Jyotishmati	Rohitaka
Arjuna	Kalamegha	Saireyaka
Arjuna	Kampillaka	Sarivadvaya
Arkadvaya	Kanchanara	Sarpagandha
Ashvagandha	Kantakari	Shalaparni
Asoka	Kapikacchu	Shallaki
Ativisha	Karkatakshringi	Shalmali
Bakuchi	Karpura	Shankhapushpi
Baladvayam.	Katuki	Shatavari
Bhallataka	Khadira	Shigru
Bharangi	Kiratatikta	Shirisha
Bhrungaraj	Kumari	Shyonaka
Bibhitaka	Kumkum Kesara	Talisa Patra
Bijak/ Vijaysar	Kupilu	Tila
Bilva	Kushta	Trivrut
Brahmi	Kutaja	Tulasi
Bruhati	Lavanga	Tvak
Chandanadvaya,	Lodhra	Ushira
Chitraka	Madanaphala	Vacha
Dadima	Mandukaparni.	Varahi
Devadaru	Manjishtha	Varahi
Dhataki	Maricha	Varuna
Durva	Musta	Vasa
Eladvayam	Nagakeshara	Vatsanabha
Eranda	Nimba	Vidanga
Gambhari	Nirgundi	Vidari
Gokshura	Palasha	Yastimadhu
Guduchi	Parpata	Yavani

### Part B-

II- Brief Knowledge of following dravyas with Respect to Sanskrit Name, Botanical Name, Family, Habit (Samanya Swarupa), Parts Used and Indications.

Agastya	Jati	Palandu
Ajamoda	Jayapala	Parasika Yavani
Akarkarabh	Jeevanti	Parijata
Amlavetasa	Kadali,	Parisha
Amra	Kadamba	Parnabija

Amragandhiharidra	Kaidarya	Parnayavani
Ankola	Kakamachi	Parpataka
Aparajita	Kamala	Parushaka
Ashvagol	Kankola	Patalagarudi
Ashvattha	Karanja	Patha
Asthishrunkhala	Karavellaka	Patola
Atasi	Karavira	Patranga
Avartaki	Karira	Pilu
Avartani	Karpasa	Plaksha
Babbula	Kasamarda	Prasarani
Badara	Kasha	Priyala
Bakula	Kasni	Priyangu
Bhumyamalki	Kataka	Puga
Bijapooru	Katphala	Putiha
Bola	Kebuka	Putranjivaka
Chakramarda	Kharjura	Rajika/Sarshapa
Champaka	Kitmari	Rohitaka
Chandrashura	Kokilaksha	Saptachakra
Changeri	Koshataki	Saptaparna
Chavya	Kulatha	Saral
Chirbilva	Kumuda	Sarja
Chopachini	Kusha	Shala
Danti	Kusmanda	Shara
Darbha	Lajjalu	Sharapunkha
Dattura	Langali	Shatahwa
Dhanvayasa	Latakaranja	Shati
Dhanyaka	Latakasturi	Snuhi
Draksha	Madayantika	Sringataka
Dronapushpi	Mahanimba	Svarnakshiri
Gandhaprasarini	Mandukaparni	Tagara .
Garjara	Markandika	Tailaparni
Gojihva,	Masha	Talmuli
Gorakshaganja	Mashaparni	Taruni
Gunja	Matulunga	Tavakshira
hinsapa	Mayaphala	Teja Patra
Hinstra	Meshashrunji	Tuvaraka
Hribera	Methika	Udumbara
Hrutpatri	Mudgaparni	urana
Ikshu	Mulaka	Vamsha
Indravaruni	Murva	Vata
Ingudi	Nagabala	Vatada
Irimeda	Nala	Vrudhadaru
Ishvaku	Narikela	Vrukshamla
Isvari	Nili	
Japa	Padmaka	

**III** .-Introduction, Guna, Karma and Uses of following Jantava Dravya (Drugs of Animal Origin).

1. Kasturi

2. Goroohana

3. Mrigasringa

**IV**- Introductory Knowledge of Following Annapana Varga:

- |                |                     |                      |
|----------------|---------------------|----------------------|
| 1. Jala Varga  | 2. Dugdha Varga     | 3. Madhu Varga       |
| 4. Taila Varga | 5. Sukadhanya Varga | 6. Shamidhanya Varga |
| 7. Phala Varga | 8. Shaka Varga      | 9. Mamsa Varga       |
| 10. Aharayogi  |                     |                      |

### **PRACTICALS**

1. A. Study of Macroscopic, Microscopic characters and Demonstration of organoleptic characteristics and grahya-agrahyatva of following plants and their useful parts.
  - i. Kanda (stem) - Guduchi or Ashtishrinkhala
  - ii. Patra (leaves) - Vasa or Kumari
  - iii. Pushpa (flower and Parts of flower)- Dhataki or Japa
  - iv. Phala (fruit) – Maricha or Madanaphala or Vidanga
  - v. Beeja (seeds) – Eranda or Kapikacchhu
  - vi. Twak (bark) – Kutaja or Arjuna or Ashwattha
  - vii. Moola(Root)- Punarnava or Chitraka
  - viii. Nirayasa (exudate) – Guggulu or Mocharasa
  - ix. Jangama dravya - Madhu or Ghrita.
2. Records of Herbarium sheets of 50 medicinal plants Compulsory study tour other state/s for field knowledge and procurement of plant species.

### **PRACTICAL MARKS DIVISION**

1	Herbarium	20 Marks
2	Practical record	20 Marks
3	Drug identification- spotting –Raw/crude drugs	30 marks
4	Plant identification spotting –fresh	30 marks
5	Practical	40 marks
6.	Viva-Voce	60 Marks
<b>Total</b>		<b>200 marks</b>

### **Reference Books**

- |   |  |
|---|--|
| 1. Abhinav Buti Darpan (Vol.1-2)                            | - Vd. Roop Lal Vaishya                                   |
| 2. Aushadna Vigyana Shastra                                 | - Acharya Pt. Vishvanatha Dwidevi                        |
| 3. Ayurvediya Aushadnkarma vigyana                          | - Acharya V.J. Thakur                                    |
| 4. Bedi Vanaspati Kosha                                     | - Prof. Ramesh Bedi                                      |
| 5. Bhaishajyaguna Vigyana                                   | - Dr. Alakhnarayan Singh                                 |
| 6. Bhav Prakash Nigantu (English)                           | - Shreekanthamurti                                       |
| 7. Bhav Prakash Nighantu                                    | - With Vd. Krishna Chandra<br>Chunekar commentary        |
| 8. Bhrinad dravyagunadarsha                                 | - Mahendra Kumar Shastri                                 |
| 9. Classical Uses of Medicinal Plants                       | - Acharya Priyavrata Sharma                              |
| 10. Controversial Medicinal Plants                          | - Vd. G. Bapa Lal  |
| 11. Dalhana Ka Dravyaguna Shastra Ke<br>Kshetra Me Yogadana | - Vd. Shiv Kumar Vyas                                    |
| 12. Dravyaguna Kosha  | - Acharya Priyavrata Sharma                              |
| 13. Dravyaguna Sutram                                       | - Acharya Priyavrata Sharma                              |
| 14. Dravyaguna Vigyana                                      | - Dr. Gyanendra Pandey                                   |
| 15. Dravyaguna Vigyana(Vol. 1-2)                            | - Acharya Yadavji Tikram Ji                              |
| 16. Dravyaguna Vijyana                                      | - Dr. V.M. Gogate  |
| 17. Dravyaguna Vigyana (Vol. 1-5)                           | - Acharya Priyavrata Sharma                              |
| 18. Dravyaguna Shastrum                                     | - Vaidya G.A. Phadake                                    |
| 19. Dravyaguna Vijyana                                      | - Dr. A.P. Deshpande                                     |
| 20. Dravyagunavijnana basic Principles                      | - Prof.D.S.Lucas   |
| 21. Forgotten Healers (Indian Medicinal<br>Plants)          | - Dr. Prakash Pranjape                                   |
| 22. Glossry of Vegetable Drugs in<br>Bhritrtrayis           | - Thakur Balwant Singh & Vd.<br>Krishna Chandra Chunekar |
| 23. Introduction to Dravyaguna                              | - Acharya Priyavrata Sharma                              |
| 24. Kriyatamka Aushadi Parichaya                            | - Acharya Pt. Vishvanath Dwidevi                         |
| 25. Materia Medica  | - Acharya Ghosh  |
| 26. Nighantu Adarsh (Vol. 1-2)                              | - Vd. Bapa Lal   |
| 27. Pharmacological basis of Medical<br>Practice            | - Goodman & Gillman                                      |
| 28. Pharmacology and<br>Pharmacotherapeutics                | - Satoskar Bhandarkar & Ainapure                         |
| 29. Prayogatamaka Dravyaguna Vigyana                        | - Dr. Maya Ram Uniyal                                    |
| 30. Priya nighantu  | - Acharya Priyavrata Sharma                              |
| 31. Raspanchaka/Dravyaguna Siddhanta                        | - Prof. Shivcharan Dhyani                                |
| 32. System of Plant Nomenclature in<br>Ayurveda             | - Dr. Gyanendra Panday                                   |
| 33. Text Book of Pharmacognosy                              | - Trees & Valis  |
| 34. Textbook of Dravyaguna                                  | - Dr.K.Nishteswar  |
| 35. Unani Dravyaguna Vigyana                                | - Hakim Daljeet Singh                                    |



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|--|-----------------------------|
| 36. Useful parts of Charaka, Sushrut,<br>and Vagbhata. | -                           |
| 37. Uttarakand Ki Vanaspatiya                          | - Dr. Gyanendra Pandey      |
| 38. Vanoaushadi Darshika                               | - Thakur Balwant Singh      |
| 39. Vanoaushadi Nidarshika                             | - Dr. Ram Sushil Singh      |
| 40. Vedic Vanaspatiyan                                 | - Dr. Dinesh Chandra Sharma |

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MPMSU-BAMS SECOND YEAR SYLLABUS

## **2.2. AGADTANTRA, VYAVAHAR-AYURVED EVUM VIDHIVAIIDYAK**

(TOXICOLOGY, FORENSIC MEDICINE AND MEDICAL JURISPRUDENCE)

**Theory One Paper – 100 Marks**

**Practical/Viva voce -50 Marks**

**Theory -200 hrs**

**Practical - 100 hrs**

### **Part- A**

**50 Marks**

- 1** Derivation, definition of Visha and Agadatantra. Scope of Agadatantra. Visha Utpatti, Visha Prabhava, Visha Pranaharana Kriya, Visha Guna, Visha Gati, Visha Vega Visha Sankata, Shanka Visha.
- 2** Definition of toxicology, Definition of poison, suicidal and homicidal poisons, classification of poisons, their action and route of administration, absorption, excretion, metabolism, diagnosis and general principles of treatment, duties of a medical practitioner in case of suspected poisoning.
- 3** Origin and Classification of Visha:-Its sources, Difference between Visha, Madya and Oja guna, Visha Upadrava and Visha Mukta Lakshana.
- 4** Tests for detection of Visha, and Modern Toxicological Techniques of detection of poisons  
Visha Data Lakshana, Visha Peeta Lakshana, Signs and symptoms of Visha afflicted organs and personal effects. (Poisoning with Anjana, Lepa paduka, Abharana etc.
- 5** Introduction to Environmental Toxicology- Samuhika Vishaprayoga- effect of chemical and nuclear warfare.
- 6** Vishopakrama described by Charak, General principles of Management of poisoning.
- 7** Manifestation of poisoning due to poisons of plant origin their fatal Dose, fatal period, management of poisoning, post mortem appearance and its medico legal importance. Visha and Upavisha- Arka, Snuhi, Langali, Karaveera, Gunja, Ahiphena, Dhattura, Bhallataka, Vatsanabha, Kupeelu, Jayapala, Bhanga & Tobacco, Parthenium hysteriphorus, Chitraka, Eranda, Digitalis and Cerebra Odallam.
- 8** Garavisha, Dooshivisha, Viruddhahara. Food adulteration and poisoning–classification, diagnosis, management and contemporary significance.
- 9** Jangama Visha – Detailed study of Sarpa, Keeta, Loota, Vrischika, Mooshika, Alarka – Visha; Lakshana, Bheda, Chikitsa and their Sadhyasadhyata (contemporary and classical views).
- 10** Introduction to poisoning due to Acids, Alkalis, metals, Non-metals, Asphyxiants and others, their Fatal Dose, Fatal period, Manifestation, management, medico legal importance and postmortem appearance of poisoning due to:
  - a) Acid and Alkalis– Sulphuric acid, Hydrochloric acid, Nitric acid, Hydrocyanic acid, Oxalic acid, Carbolic acid, Formic acid, alkalis in general.
  - b) Asphyxiants – Carbon monoxide, Carbon dioxide, Hydrogen sulphide
  - c) Nonmetallic poisons – Phosphorous, Iodine  
Metallic poisoning – Arsenic, Mercury, Lead, Copper, Zinc, Tin.

d) Others - Petroleum – Kerosene Organo phosphorus compounds -Aluminum phosphate, Organo Chlorinated Compounds, Household poisons.

**11** Madya and Madatyaya. Alcohol poisoning (Ethanol and Methanol).

**12** *Introduction to Narcotic drugs and Psychotropic substances Act 1985.*

**Part –B**

**50 Marks**

- 1.** Definition of Vyavahara Ayurveda (Forensic medicine) and Vidhivaidyaka (Medical jurisprudence), concise history of Vyavahara Ayurveda (Forensic medicine) and Vidhivaidyaka (Medical jurisprudence). Introduction to Indian Penal Code, Indian Evidence Act and Criminal Procedure Code.
- 2.** Legal Procedures:- Inquest, Evidence, Witness, Courts and their powers.
- 3.** Personal identity and its Medico legal aspects, forensic odontology, Introduction to Forensic Serology and DNA profiling.
- 4.** Death and its Medico Legal Aspects, Medico Legal autopsy and *exhumation*.
- 5.** Injuries and thermal injuries, their medico Legal aspects, general introduction of weapons.
- 6.** Dowry deaths (Domestic Violence), their Medico Legal importance and laws in relation to it.
- 7.** Asphyxial deaths and its Medico Legal importance.
- 8.** Medico Legal importance of Pregnancy, Delivery; Impotence & Sterility, Abortion, Infanticide, battered baby. Virginity, Artificial Insemination, Legitimacy.
- 9.** Sexual offences, and their Medico Legal aspects. Sexual perversions.
- 10.** Introduction to Forensic psychiatry.
- 11.** Introduction to forensic laboratory.
- 12.** Ethics as in classical Texts. Types of Vaidya, Pranabhisara and Rogabhisara Vaidya, Qualities of Vaidya, Responsibilities of Vaidya, Chaturvidha Vaidyavrutti, Duties of Vaidya to his patient, Vaidya Sadvrittam, Apujya Vaidya, Code of conduct.
- 13.** Laws in relation to Medical practitioners: Indian Medicine Central Council Act.
- 14.** Maintenance of medical record.
- 15.** Physician's responsibility in criminal matters, Professional negligence, Civil negligence, Criminal negligence, Medico Legal aspects of Acquired Immune Deficiency Syndrome, Rights of an unborn child, Medical Termination of Pregnancy Act Transplantation of

human organs Bill 1994, Pre Natal Diagnostic Testing Act, Malingering of feigned diseases, International Code of Medical Ethics for Doctors. Clinical establishment Act. Consumer Protection Act 1986.

## PRACTICAL

### Practical Training

1. Post Mortem examination
2. Evidence in the court
3. Demonstrations in the Forensic & Toxicology museum  
(Toxic & Anti toxic substances, medico legal specimens & Charts)
4. Clinical postings
5. Library Hours for compilation

### Distribution of Practical Marks

- |  |          |
|--|----------|
| 1. Post Mortem examination and Court posting – Case Record | 10 Marks |
| 2. Practical/Clinical Record Book                          | 10 Marks |
| 3. Identification (spotting)                               | 10 Marks |
| 4. Viva – voce   | 20 Marks |

### Total

**50 Marks**

### Reference Books

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|---|--|
| 1. Topics related to Agada Tantra from Charak Samhita, Sushrut Samhita, Ashtanga Hridaya, Ashtanga Samgraha, Kasyapa Samhitha, Yogaratnakara, Bhavaprakasha and Madhava Nidana. |  |
| 2. Vidhivaidyaka (Vyavahar Ayurveda Vijnan)   | Dr.Charuchandra Pathak                 |
| 3. Medical Jurisprudence and Toxicology   | Modi                                   |
| 4. Basavarajeeyam   | Edited by Vd.Govardhan                 |
| 5. Agada Tantra   | Sh. Ramanath Dwivedi                   |
| 6. Text book of Agada Tantra  | Edited by Dr Huparikar, Dr.Joglekar    |
| 7. Agadatantra ki Pathyapustaka   | Edited By Dr Huparikar,<br>Dr.Joglekar |
| 8. Agad Tantra  | Dr. Shekher Namboodri                  |
| 9. Vishachikitsa<br>(Ayurveda Toxicology English Translation)   | Vaidya Balakrishnan Nair, Kerala       |
| 10. Medical Ethics and Medical Laws in India  | Dr. H.S. Mehta                         |
| 11. Toxicology Ayurvedic Perspective  | VPSV Ayurveda college Kottakkal        |
| 12. Kautilya Arthashastra (English)   | Prof. Kangle                           |
| 13. Kautilya Arthashastra (Hindi)   | Dr. Raghunath Singh                    |
| 14. Vyavahar Ayurveda   | Dr.Ayodhya Prasad Achal                |
| 15. Vyavahar Ayurveda Vigyanam  | Dr.Indramohan Jha (Sachchan)           |
| 16. Textbook of Forensic Medicine and Toxicology  | Dr. V.V.Pillay                         |
| 17. Forensic Medicine   | Dr. B. Umadathan                       |
| 18. Relevant Acts   | Govt. of India                         |
| 19. Relevant topics from Manu Smriti  |  |

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## **2.3. Rasashastra Evam Bhaishajyakalpana**

**(IATROCHEMISTRY AND AYURVEDIC PHARMACEUTICS)**

**Theory -Two Papers**

**Total Marks- 200**

**Teaching hours-200**

**Practical :-**

**Total Marks-200**

**Teaching hours-200**

### **RASASHASTRA**

**Paper 1**

**100 Marks**

**Part A**

**50 Marks**

1. Definition and etymology of Rasa, History of Rasashastra, Importance of Rasaushadhi, Concept of Rasa-Rasayana, Concept of Raseshwar Darshana. Concept of Rasashala and Rasamandap.
2. Brief Description and Application of Technical terminologies (Paribhasha): Avapa, Nirvapa, Dhalana, Bhavana, Jarana, Murchana, Shodhana, Marana, Amrutikarana, Lohitikarana, Mruta Loha, Satwa Patana, Druti, Apunarbhava, Niruttha, Rekhapurna, Varitara.
3. Dravya Varga: Amlavarga, Panchamrittika, Panchagavya, Panchamrita, Ksharashtaka, Dravakagana, Mitra panchaka, Rakta varga, Lavanapanchaka.
4. Brief description of Yantras and their application Ulukhala Yantra, Khalwa Yantra, Kachhapa Yantra, Damaru Yantra - Vidhyadhara Yantra- Urdhwapatan, Addhapatan & Tiryakpatana Yantra, Jaranartha Tulayantra, Dolayantra, Patalayantra, Palika Yantra, Baluka Yantra, Bhudhara Yantra, Sthali Yantra, Swedana Yantra.
5. Brief description & application of Musha (Crucible): Samanya Musha, Gostani musha, Vajra Musha, Maha musha, Yoga musha, Vrintaka Musha, Malla / Pakwa musha. Different types of crucibles e.g. Silica crucible, platinum crucible. Mudra and Sandhi Bandhana.
6. Brief description & applications of Chullika, Satwapatana Koshthi, Patala Kosthi, Gara Koshthi, Angarakoshthi and knowledge of various heating appliances viz. Gas stove, Hot plate, Heating mantle, Induction Stove, Hot Air Oven.
7. Concept, definition and types of Puta: Suryaputa, Chandraputa, Gomayaputa, Lawakaputa, Kukkutaputa, Kapotaputa, Varahaputa, Gajaputa, Mahaputa, Kumbhaputa, Valukaputa, Bhudharaputa, Applications of Electric muffle furnace and fuel (diesel) dependent furnace. Brief introduction to thermocouple and pyrometer.
8. Knowledge of Parada: Synonyms, Occurrence, natural and artificial sources of Parada, Hingulottha parada, Types of Parada, Parada Dosha: Naisargika, Yougika, Aupadhika

(Kanchuka). Grahya-Agrahya Parada, Parada gati, Parada bandha, Shodhana of Parada. Parada sanskara and brief description of Ashtasamskara.

9. Concept of Murchhana and Jarana of Parada, Preparation of Kajjali, Classification of Rasaushadhi: Khalvi rasa e.g. Tribhuvana Keerti Rasa, Parpati Rasa- Rasa Parpati, Kupipakva Rasa- Rasa sindur, Pottali rasa - Hemagarbha pottali. Rasa sevana vidhi and pathya and apathya.

10. Brief introduction of quality control , standardization and GMP of Rasaoushadhies.

**Part B**  
**Marks**

50

Occurrence, Synonyms, Minerological identification, Sources, Types, Grahya and Agrahyata, Shodhana, Marana and other processing techniques. Properties, dose, anupan and therapeutic uses, pathya – apathya and ashuddha, apakwa and avidhee sevanjanya dosha and its management, important formulations of the following:

1. **Maharasa** –Abhraka (Biotite Mica), Vaikrantha, Makshika (Chalco-pyrite), Vimala (Iron Pyrite), Shilajatu, Sasyaka (Peacock ore), Chapala and Rasaka (Sphalerite).
2. **Uparasa** – Gandhaka (Sulfur), Gairika (Red Ochre), Kasisa (Green Vitriol), Kankshi (Alum), Haratala (Orpiment), Manahshila (Realgar), Anjana and Kankustha.
3. **Sadharana Rasa** – Kampillaka, Gauri pashana (Arsenic oxide), Navasadara (Ammonium chloride), Kaparda (Cowry), Agnijara, Giri Sindura (Red oxide of Hg), Hingula (Red Cinnabar) and Mriddara shringa (Litharge).
4. **Dhatu** -Swarna (Gold), Rajata (Silver), Tamra (Copper), Loha (Iron), Vanga (Tin), Naga (Lead), Yashada (Zinc), Kamsya (Bronze), Pittala (Brass), Vartaloha. Dhatu - graha sambandha.
5. **Ratna** - Manikya (Ruby), Mukta (Pearl), Pravala (Coral), Tarkshya (Emerald), Pushparaga (Topaz), Vajra (Diamond), Nilam (Sapphire), Gomeda (Zircon or Cinnamome stone), Vaidurya (Cats eye). Ratnapariksha, Ratnadosha, Ratna-graha sambandha.
6. **Uparatna**- Vaikranta (Tourmaline), Suryakanta (Sun stone), Chandrakanta (Moon stone), Rajavarta (Lapis lazuli), Perojaka (Turquoise), Sphatikamani (Quartz), Trinakanta, Palanka, Putika, Rudhir.
7. **Sudha varga** – Sudha (Lime stone ), Kaparda (Cowries), Shukti (Oyster Shell) , Shankh (Conch Shell), Mriga shringa (Stag horn), Khatika, Godanti (Gypsum) and Samudraphena (Cattle Fish bone), Kukkutanda twak (Hen's Egg Shell).

- 8. Sikata varga** - Sikata (Silica), Dugdhapashana (Talc), Nagapashana / Jaharmohara (Serpentine), Badarshama (silicate of lime ), Vyomashma (Sangeyashab - Jade), Kousheyashma (Asbestos) and Akika (Agate).
- 9. Kshara varga** - Sarja kshara (Sodium bicarbonate), Yava kshara, Tankana kshara (Borax), Surya Kshara (Potassium Nitrate).
- 10. Miscellaneous** - Mandura, Bola, Dam-ul Akhawayan (Raktabandhini), Kasturi, Bhoonag, Mayurpiccha, Sarjarasa, Madhoochishta.
- 11. Visha and Upavisha**-Introduction, collection and storage, classification, synonyms, shodhana, antidote, therapeutic and toxic doses, anupan, therapeutic uses, and formulations of following Visha and Upavisha-Vatsanabha, Kuchala, Jayapala, Dhattura, Bhang, Bhallataka, Gunja, Arka, Snuhi. Langali, Karaveera, Ahiphena and Chitrakmool.
- 12. Aushadhi Yoga Gyanam- ingredients, manufacturing process, and bhesajprayogvidhi.** Arogya Vardhini Gutika, Kasturibhairava Rasa, Kumara Kalyana Rasa, Garbhapala Rasa, Chandraprabha Vati, Chandramrita Rasa, Pratapalankeshwara Rasa, Pravalapanchamrita Rasa, Anandbhairava Rasa, Yogendra Rasa, Laxmivilas Rasa, Vasantakusumakara, Vasantamalati Rasa, Brihat Vata Chintamani Rasa, Shankha vati, Shwaskuthara Rasa, Hinguleswara Rasa, Hemagarbhapottali, Hridyarnava Rasa, Swarnavanga, Makaradhwaaja, Putapakwavaisham Jwarantaka Loha, Vatvidhvamsan Rasa, Kamadugha Rasa, Laghusutshekhar Rasa, Navayasa Loha, Saptamrita Loha, Tamra Parpati, Panchamrita Parpati, Sveta Parpati.
- 13. Introduction to pharamcovigilance and its status in India, with reference to Ayurvedic drugs.**  
 A) Necessary to know – From part A and B : S. No. 1 to 9  
 B) Desired to know – From part B : S. No. 10

**Practical**

**100 Marks**

**Minimum Twenty five practicals to be performed**

- |                          |  |
|--------------------------|--|
| <b>1. Rasa [Parada]</b>  | Samanya Shodhana of Parada<br>Kajjali<br>Mugdha rasa   |
| <b>2. Maharasa varga</b> | Shodhana of Abhraka<br>Dhanyabhraka nirmana<br>Shodhana of Makshika<br>Shodhana of Shilajatu<br>Shodhana of Sasyaka. |
| <b>3. Uparasa varga</b>  | Shodhana of Gandhaka<br>Shodhana of Gairika  |

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Shodhana of Kasisa  
Shodhana of Kankshi  
Shodhana of Haratala

- |                                |  |
|--------------------------------|--|
| <b>4. Sadharana rasa varga</b> | Rasa manikya nirman<br>Shodana of Manashila<br>Shodhana of Hingula<br>Sodhana of Navasadar<br>Shodhana of Kapardika  |
| <b>5. Sudha Varga</b>          | Shodhana of Shankha<br>Shodhana of Shukti<br>Shodhana of Pravala mula<br>Shodhana of Godanti   |
| <b>6. Dhatu varga</b>          | Samanya Shodhana of Lauha<br>Shodhana of Mandura<br>Samanya Shodhana of Tamra<br>Shodhana of Naga<br>Shodhana of Vanga<br>Shodhana of Yashada<br>Shodhana of Tankana |
| <b>7. Kshara Varga</b>         | Preparation of Rasaparpati, Bola<br>Parpati and Swetaparpati   |
| <b>8. Parpati</b>              |  |
| <b>9. Visha varga</b>          | Shodhana of Vatsanabha,<br>Bhallataka, Kupilu, Dhattura beeja,<br>Jayapala, Gunja, Chitrakamoola.  |

#### **PRACTICAL FOR DEMONSTRATION / GROUP PRACTICALS**

- 1.** Hingulad rasakrishti (Hingulottha Parada).
- 2.** Bhasma: 4 (One from each group)
  - i. Abhraka bhasma, Swarna Makshika bhasma, Tamra bhasma
  - ii. Vanga bhasma, Naga bhasma, Yashada bhasma
  - iii. Mandura bhasma, Kasisa bhasma
  - iv. Shankha bhasma, Kapardika bhasma, Godanti bhasma.
- 3.** Pishti : 1 Pravala pishti, Jaharmohara / Akika pishti,  
Trina kantha mani pishti, Mukta pishti.
- 4.** Druti : 1 Gandhaka druti.
- 5.** Formulations 4 (one from each group)
  - i. Rasasindura, Swarna vanga, Sameer pannaga rasa
  - ii. Saptamruta lauha, Punarnava mandura, Navayasa lauha
  - iii. Agnitundi vati, Tribhuvana kirti rasa, Sootshekhara rasa,  
Laghusutashekhara Rasa
  - iv. Arogyavardhini vati, Laghumalinivasanta rasa, Hinguleshwar rasa,  
Anandbhairav rasa, Rajapravartini vati



## BHAISHAJYAKALPANA

**Paper II**

**100 Marks**

**Part A**

**50 Marks**

- 1. History and Chronological (kramika vikasa) development** of Bhaishajyakalpana. Concept of Aushadha and Bheshaja.
- 2. Fundamental principles of Bhaishajya Kalpana.**
- 3. Study of Ancient and Contemporary systems of 'Maana' (Units of measurement), Shushka -ardra -drava- dravya grahan niyam** (Rules of measures of dry, fresh, liquid drugs); Grahyagrahyatva, Nava Puran dravya grahan niyam.
- 4. Guidelines and Methods of collection, storage, preservation of Aushadhi dravya.** Concept of Saviryatavadi (shelf life) and stability in ancient and contemporary science.
- 5. Bheshajprayogavidhi : Aushadha Matra, Anupana and sahapan and Aushadh sevan kaala. (Posology).**
- 6. Panchavidha kashaya kalpana and Other kalpana :** Kashaya Yoni, Swarasa, Kalka, Kwatha, Hima and Phanta, Pramathya, Aushadha siddha paniya, Tandulodaka, Laksha rasa, Mantha, Panaka, Arka, Churna, Rasakriya, Ghana, Phanita, Avaleha, Prasha, Gudapaka, Sharkara, Syrups, Ksheerapaka, Satva, Guggulu kalpana, Vati, Gutti, Pinda, Modaka, Varti Preparation of Tablets, pills, capsule and Suppositories. Masi kalpana, Lavana kalpana, Kshara kalpana and Kshara sutra.
- 7. Introduction and general knowledge of useful instruments/ Equipments -** Disintegrator, Mixer, Grinder, End Runner, Edge Runner, Sieve-Shaker, Granulator, Tableting machine, Pill making machines, coating and polishing pan, capsule filling machine, sieves and mesh.
- 8. Sneha kalpana :** Sneha yoni, Types of Sneha, Sneha murchana vidhi, Sneha paka vidhi, patra paka, types and their use. Sneha siddhi lakshana, dose, Preparation and uses of Triphala Ghrita, Bramhighrita, Narayana taila, Anutaila.
- 9. Sandhana Kalpana and its types:** Madya Kalpana, Asava, Arishta, Sura (Prasanna - Kadambari - Medaka - Jagala - Bakkasa), Maireya, Surasava, Shukta, Kanjika, Sauvira, Tushodaka, Sidhu kalpana their methods of preparation, siddhi lakshana, properties, uses, doses. Takrarishta, Draksharishta, Ashokarishta, Dashamoolarishta, Kumaryasava, Chandanasava.
- 10. Kritanna and Aushadhisiddha anna Kalpana:** Definition of Kritanna, Concept of Pathya and Apathya, Yavagu -types of yavagu, Manda, Peya, Vilepi, Anna, Bhakta,

Odan, Yush -types, Krishara, Mansa rasa, Vesavara, Khad Kamblika, Raga, Shadava, Dadhi and Takra Varga – Takra, Udasvita, Katvar, Mathita, Chhachika.

## **PART B**

- 1. Bahyopacharartha kalpana (External Applications)-Lepa** -Types of Lepa, methods of preparation and mode of application. Udvartan and Avachurnan, Method of preparation of Siktha Taila, Malahara – Sarjarasa Malahara, Gandhak Malahara, Upanaha, Atasi upanaha, Shatadhouta and Sahastradhouta Ghrita. Brief introduction of semi solid dosage forms- Ointments, Creams, Emulsions, Gels, Lotions.
- 2. Principles and precautions for preparation of formulations for following:**
  - 2.1 Netraupacharartha kalpana (Ophthalmic preparations)** – Seka, Drava, Pindi, Anjana - Ashchyotana - Tarpana - Putapaka and Vidalaka, Methods of preparation of eye drops, eye ointments.
  - 2.2 Nasyopachararth Kalpana** - Classification of Nasya, Navana, Avapidana, Pradhaman, Marsha and Pratimarsha nasya.
  - 2.3 Dhumapanarth kalpana** - Classification of dhumpaana, Method of preparation of dhumvarti and it's therapeutic uses. Dhupan: Vranadhupan, arshodhupan.
  - 2.4 Mukhaprayogarth kalpana** - Gandoosha - Kavala - Pratisaran, Tooth paste, Tooth powders and Mouth wash.
  - 2.5 Basti kalpana**- Classification, Method of preparation of Niruha and Anuvasana, Basti Therapeutic properties and uses of Basti.
- 3** Brief knowledge of Standardization of Ayurvedic formulations- Kastaushadhi.
- 4** Brief introduction of Drug and Cosmetics Act 1940 and Rules 1945.
- 5** Concept of, Aushadhi Nirmanshala, with respect to Good Manufacturing Practices (GMP) in accordance to Schedule T.

### **Practical Bhaishajya Kalpana**

**50 Marks**

#### **Following practicals to be performed- (Minimum one from each category)**

Method of preparation, therapeutic uses, dose and anupana of the following

- 1.** Swarasa- Ardraka swarasa, Tulasi swarasa, Kumari Swarasa, Vasa putapaka swarasa
  - 2.** Kalka- Nimba kalka, Rasona kalka.
  - 3.** Kwatha- Punarnavasthaka kwatha, Rasna Sapthaka kwatha, Kulattha kwath.
  - 4.** Hima- Dhanyaka hima, Sarivadi hima .
  - 5.** Phanta- Panchakola phanta, Yastimadhu Phanta.
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6. Pramathya- Mustadi pramathya
7. Mantha- Kharjuradi mantha
8. Aushadh siddha paniya- Shadanga paniya
9. Laksha Rasa.
10. Arka - Yavani arka, Gulab arka, Misreya arka
11. Panaka- Chinchha panaka, Chandan panaka.
12. Sharkara- Banapsha sharkara, Nimbu sarkara.
13. Churna- Sitopaladi Churna, Hinguwashtaka Churna.
14. Gutika- Chitrakadi Gutika, Sanjivani Vati.
15. Guggulu-Triphala Guggulu, Kaishora Guggulu.
16. Avaleha- Chyavanaprashavaleha, Vasavaleha, Vyaghri Haritaki avaleha, Manibadra avaleha.
17. Rasa kriya - Darvi Rasakriya, Guduchi Ghana, Kutaja Ghana.
18. Khanda- Haridra khanda, Narikela khanda, Sowbhagya shunti paka
19. Satva- Amruta satva,
20. Varti- Phala varti, Chandrodaya varthi
21. Lavana- Arka lavana, Narikela lavana
22. Masi- Triphala masi, Mayurpiccha Masi
23. Ksheerapaka- Arjuna ksheerapaka, Rasona ksheerapaka, Shunthi Ksheerapaka
24. Kshara- Apamarga kshara, Snuhi kshara, Ksharasutra. .
25. Manda, Peya, Vilepi, Yavagu, Krishra, Vesavara
26. Yusha - Mudga yusha, Saptamushtika yusha, Kulattha yusha
27. Aristha- Kutajarishta, Takrarishta .
28. Asava - Kumaryasava, Kanakasava
29. Sukta kalpana- Kanji
30. Udaka- Tandulodaka
31. Upanaha- Atasi Upanaha
32. Siktha Taila Nirmaan
33. Malahara- Sarjarasa malahara, Gandaka malahara, Cream, Emulsion. Sneha Kalpana  
Sneha Murchhana - Ghrita Murchana, Taila Moorchhana, Ghrita kalpana: Jatyadi ghrita, Triphala ghrita, ksheerashatphala ghrita- Taila kalpana-Panchaguna taila, Arka taila, Bala taila, Jatyadi taila
35. Taila patana- Bhallataka taila patana, Jayapala taila patana
36. Shodhana- Guggulu, Hingu.

**II. Visit of minimum three GMP approved Ayurvedic manufacturing units.**

## Distribution of Practical Marks: Total 200 Marks

### Rasashastra - 100

1. Record Book	-	10 Marks
2. Experiment	-	30 Marks
3. Spotting	-	20 Marks
4. Viva-voce	-	40 Marks

### Bhaishajyakalpana - 100

1. Record Book	-	10 Marks
2. Experiment	-	30 Marks
3. Spotting	-	20 Marks
4. Viva-voce	-	40 Marks

### Reference Books

1. Adyatan Rasa Shastra	R.K. Goyal
2. Abhinav Rasa Shastra	Vaidya Somadev Sharma
3. Asava Arishta Vigyanam	Dr. Pakshdhar Jha
4. Ayurvediya Rasa Shastra (Sachitra)	Chandrabhusan Jha
5. Ayurvediya Rasa Shastra	Badrinarayan Pandey
6. Rasa Bhaishajya Paribhasa	Sureshananda Thapaliyal
7. Ayurvediya Rasa Shastra	Prof. Siddhi Nandan Mishra
8. Ayurved Prakash	Vaidya Gujrat Mishra
9. Drugs and Cosmetic Act - 1940	
10. Paka Darpana	Dr. Indradev Tripathi
11. The Paka-darpana of King Nala	Dr. Madhulika critical study
12. Parada Vigyaniam	Vasudev M. Dwivedi
13. Pratyaksha Aushadh Nirmanam	Acharya VishwanathDwivedi
14. Bhaishjyakalpana Vigyanam	Dr. Agnihotri
15. Rasa Tarangini	Sadanand Sharma
16. Rasa Darpan	Prof. Bhajan Das Swami
17. Rasa Bindu	Dr. Sanjay Sharma
20. Rasa Bhaishajya Kalpana Vigyan Vaidya	Santosh Kumar Khandal
21. Rasa Mitra	Dr. Tryambak Nath Sharma
22. Rasa Ratna Samuchchaya (Hindi)	Dattatreya Ananta Kulkarni.
23. Rasaratna samuchchaya-	Ambikadatta shastri
24. Rasaratna samuchchaya -	Damodar Joshi
25. Rasa Shastra Prayogiki Srivastava,	Yadav and Prof. Ramesh Saxena
26. Rasamritam	Vaidya Yadavji Tirkramji Acharya

25. Rasayan Sara  
26. Rasendra Sampradaya  
27. Rasendra Sara Sangraha  
29. Vaidyak Paribhasha Pradeep (Hindi Translation)  
30. Sharangadhara Samhita  
31. Bharatiya Bhaishajya Kalpana Vigyana  
32. Bhaishajya Kalpana Vijnanam  
33. Rasa Shastra (English)  
34. Rasa Ratna Samuchchaya (English)  
35. Rasendra Chintamani (Hindi)  
36. Ayurvedic formulary of India  
38. Ayurvedic Pharmacopoeia of India , CCRAS  
39. Bhaishjya Kalpana Vigyan  
40. Textbook of Rasashasra  
41. Ashadhayoga Vigyanam  
42. Vaidyaka Paribhasha Pradipa (English Translation)  
43. Relevant parts of Brihatrayee  
44. Text book of Bhaishjya Kalpana -  
45. Text Book of Rasa Shastra  
46. Rasa Chandashu  
47. Bhaishjya Ratnawali  
48. Yoga Ratnakar
- Vaidya Shyam Sunderacharya  
Vaishya  
Vaidya Hajari Lal Sukul  
Vaidya Gopal Krishna  
Dr. Indradev Tripathi  
Dr. Radhakrishna Parashar  
Gananath Vishwanath Dwivedi  
Dr. K Ramachandra Reddy  
Prof. Damodar Joshi  
Prof. Damodar Joshi  
Prof. Siddhinandan Mishra  
Siddhi Nandan Mishra  
Dr. K Ramachandra Reddy.  
Dr. K. Ramachandra reddy  
Dr. K. Ramachndra Reddy &  
Dr. P. Suresh  
Dr Shobha G Hiremath  
Dr P H C Murthy  
Prof S S Savirkar (CCRAS Publication)  
Prof S N Mishra

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## **2.4 CHARAKASAMHITA -PURVARDHA**

**(Sutrasthana, Nidanasthana, Vimanasthana, Sharirasthana and Indriyasthana)**

**Theory- One Paper- 100 Marks  
Lectures – 200 Hours**

### **Part A**

- |                  |   |          |
|------------------|---|----------|
| 1. Sutrasthana   | - | 40 Marks |
| 2. Indriyasthana | - | 10 Marks |

### **Part B**

- |                  |   |          |
|------------------|---|----------|
| 1. Nidanasthana  | - | 15 Marks |
| 2. Vimanasthana  | - | 20 Marks |
| 3. Sharirasthana | - | 15 Marks |

### **Reference Books**

1. Charakasamhita –Ayurveda Dipika commentary by Chakrapani.
2. Charakasamhita (Hindi Commentary): Vaidya Jayadev Vidyalankar or Vd. Atridev Vidyalankar or Prof. Gorakha Nath Chaturvedi & Kashinath Shastri or Dr. Brahmanand Tripathy or Dr. Ravi Dutta Tripathy
3. Charakasamhita (English Commentary): Dr. Ram Karan Sharma & Vd. Bhagwan Dash or Acharya Priyavrata Sharma.
4. Charakasamhita-Ayurveda Dipika Commentary-Hindi Translation by Dr. B L Gaur, published by Rashtriya Ayurved Vidyapeeth.

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