

Sub: Rasashastra & Bhaishajya Kalpana

Rasashastra Paper I

Course Outcome (CO)

| Topic | Must Know | Desirable to know | Nice to Know |
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| 1. History of Rasashastra 3 Hours I Semester | Derivation of the word Rasa and its etymology. History of Rasashastra | | |
| | | Importance of Rasaushadhi | |
| | | | History of Metallurgy & Mineralogy |
| Student should be able to- CO-1: Define the word Rasa and its etymology. CO-2: Describe History of Rasashastra CO-3: Describe importance of Rasaushadhi | | | |
| 2. Paribhasha prakaran & dravya varga 2 Hours | Definitions of – Apunarbhava , Amritikaran, Amlavarga , Aavapa , ksharshatak, Kshirtraya, Jaran, Dravakgana, Dhalana, Nirvapana , Niruthikarana , Panchamrita, Panchagvyva, Panchamritika, Bhavana , | | |
| | | Madhurtranya, Mritaloha, Maran, rekhapurnatwa, Lavanpanchak, Lohitakarana, Varitartwa, Satwapatana,. | |
| | | | Beejabhaga , Rudra bhaga ,Dhanvantari bhaga , Shuddhavartha |
| Student should be able to- CO-1: Define Paribhasha with suitable example CO-2: Describe Aavapa, Dhalana and Nirvapana CO-3: Describe the term Madhurtranya, Lavanpanchak, Panchagvyva and Panchamritika CO-4: Describe Beejabhaga , Rudra bhaga ,Dhanvantari bhaga | | | |
| 3. Yantras and their | Udukhala yantra, Khalwa yantra, Kachhapa yantra, Patana yantra, Tula yantra, Damaru yantra, Dola | | |

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| uses 4 hours | yantra, Vidyadhar yantra, Patala yantra, Palika yantra, Puta yantra, Valuka yantra, Budhara yantra, Sthali yantra, Swedan yantra | | |
| | | pH Meter, Electrical balance, Electronic balance | |
| | | | Applicability of pH Meter, Electrical balance, Electronic balance |
| <p>Student should be able to-</p> <p>CO-1: Define Yantra with suitable example CO-2: Describe Udukhala yantra and Khalwa yantra CO-3: Describe Patan yantra, Damaru yantra and dola yantra CO-4: Describe Palika yantra, Puta yantra, Valuka yantra CO-5: Describe pH Meter and Electronic balance and its applicability</p> | | | |
| 4. Musha 2 hours | Definition, types, synonyms, constituents of Samanya musha Brief description & application of Gostani Moosha, Vajramoosha, Mahamusha, Yogamusha, Vrintaka musha, Malla /Pakwa musha | | |
| | | Modern form of Crucibles | |
| | | | Application of Crucibles |
| <p>Student should be able to-</p> <p>CO-1: Define Musha synonyms and its types. CO-2: Describe constituents of Samanya musha CO-3: Describe in brief about Gostani Moosha and Vajramoosha CO-4: Describe in brief about Vrintaka musha & Pakwa musha CO-5: Describe in brief Modern form of Crucibles with its Application</p> | | | |
| 5. Koshthi 1 hour | Brief description & application of Satwapatan Koshthi, Angar Koshthi, Chulika, Patala Koshthi, Gara Koshthi | | |
| | | Modern form of Koshthi ie. Gas stove, Hot plate & Heating Mantle | |
| <p>Student should be able to-</p> <p>CO-1: Define Koshthi and its types. CO-2: Describe Angar Koshthi and Patala Koshthi with its applications. CO-3: Describe Modern form of Koshthi with its applications</p> | | | |
| 6. Puta 1 hour | Definition & types of Puta, Uses and Quantity of fuel used in Kukutaputa, Kumbhaputa, Gajaputa, Balukaputa, Bhudharaputa, Mahaputa, Lawakputa, Varahaputa. Surya puta, Chandra | | |

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| | puta, Govara puta | | |
| | | Modern form of Puta | |
| | | | Application of Electrical furnace & fuel dependant furnace |
| <p>Student should be able to-</p> <p>CO-1: Define Puta and its types. CO-2: Describe uses and quantity of fuel used in Mahaputa CO-3: Describe uses and quantity of fuel used in Gajputa CO-4: Describe uses and quantity of fuel used in Lawakputa, Varahaputa and kukkutputa CO-5 : Describe application of Electrical furnace in Ayurveda pharmaceutical industry</p> | | | |
| 7. Description of Parada 4 Hours | Derivation of term Ras, Synonyms, Significance, Sources and Ores, Various types of Doshas (Naisargika, Yaugik, Kanchuki), Characteristics of grahya & Agrahya Parad, Samanya shodhana of parad, general and therapeutic uses of Parad, Ashta Sankara of Parad, Method of extraction of Parad from Hingula. | | |
| | | Vishishta shodhan | |
| | | | Ashtadash sanskar of parad |
| <p>Student should be able to-</p> <p>CO-1: Define the term rasa and its synonyms. CO-2: Describe sources and ores of mercury. CO-3: Describe various types of Doshas and its effects. CO-4 : Describe characteristics of grahya & Agrahya Parad. CO-5 : Describe samanya and vishesh shodhana of mercury. CO-6 : Describe method of extraction of Parad from Hingula</p> | | | |
| 8. Murchhana & Jarana of Parada 8 hours | Types of Murchhana, preparation, doses, properties and therapeutic uses of Kajjali, Rasa Karpura, Rasa Pushpa, Rasa Sindoor, Siddha Makardhwaja, Rasa Parpati, Tribhuvankirti ras, Sootasekhar ras, Tamra parpati, Gagan parpati, Sameerpannag ras, Hemgarbha pottali | | |
| | | Types of Bandha, Purpose of Bandha | |
| | | | Constituents in each Bandha |
| <p>Student should be able to-</p> <p>CO-1: Define Murchhana of Parad and its types.. CO-2: Describe preparation, doses, and therapeutic uses of Rasa Karpura, Rasa Pushpa CO-3: Describe preparation, doses, and therapeutic uses of Rasa Sindoor</p> | | | |

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| CO-4 : Describe preparation, doses, and therapeutic uses of Kajjali and Rasaparpati CO-5 : Describe preparation, doses, and therapeutic uses of Tribhuvankirti ras , Sootasekhar ras CO-6 : Describe Types and Purpose of Parad bandha | | | |
| 9. Description of Maharasa | Occurance, Synonyms, Natural & artificial sources, varieties, Grahyta & Agrahyta , shodhana, marana , satvapatna, properties , doses & therapeutic uses of <i>Abhraka, Vaikrant, Makshik, Vimal, Shilajeet, Sasyak, Chapala, Rasak</i> | | |
| | | Physical properties of <i>Maharas</i> | |
| | | | Minerological identification of Maharasa |
| Student should be able to- CO-1: Describe Occurance, Synonyms, sources, varieties, Grahyta & Agrahyta , shodhana, marana , satvapatna, properties , doses & therapeutic uses of <i>Abhraka</i> CO-2: Describe Occurance, Synonyms, sources, varieties, Grahyta & Agrahyta , shodhana, marana , sa, properties , doses & therapeutic uses of <i>Vaikrant</i> CO-3: Describe Occurance, Synonyms, sources, varieties, Grahyta & Agrahyta , shodhana, marana , sa, properties , doses & therapeutic uses of <i>Makshika</i> CO-4 : Describe Occurance, Synonyms, sources, varieties, Grahyta & Agrahyta , shodhana, marana , sa, properties , doses & therapeutic uses of <i>Vimal</i> CO-5 : Describe Occurance, Synonyms, sources, varieties, Grahyta & Agrahyta , shodhana, marana , sa, properties , doses & therapeutic uses of <i>Shilajeet</i> CO-6 : Describe Occurance, Synonyms, sources, varieties, Grahyta & Agrahyta , shodhana, marana , sa, properties , doses & therapeutic uses of <i>Sasyaka</i> CO-7 : Describe Occurance, Synonyms, sources, varieties, Grahyta & Agrahyta , shodhana, marana , sa, properties , doses & therapeutic uses of <i>Chapala & Rasak</i> CO-8 : Describe Physical properties of <i>Maharas</i> CO-9 : Describe Minerological identification of Maharasa | | | |
| Description of Uparasa 7 Hours | Occurance, Synonyms, Natural & artificial sources, varieties, Grahyta & Agrahyta , shodhana, marana , satvapatna, properties , doses & therapeutic uses of <i>Gandhak, Gairik Kasis, Kankshi, Hartal, Manashila, Anjana, Kankushtha</i> | | |
| | | Physical properties of <i>Uparasras</i> | |
| | | | Minerological identification of <i>Uparasa</i> |
| Student should be able to- CO-1: Describe Occurance, Synonyms, sources, varieties, Grahyta & Agrahyta , shodhana, , properties , doses & therapeutic uses of <i>Gandhaka</i> CO-2: Describe Occurance, Synonyms, sources, varieties, Grahyta & Agrahyta , shodhana, doses & | | | |

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| <p>theraaptic uses of <i>Gairika</i> CO-3: Describe Occurance, Synonyms, sources, varieties, Grahyta & Agrahyta , shodhana, marana , properties , doses & theraaptic uses of <i>Kasis</i> CO-4 : Describe Occurance, Synonyms, sources, varieties, Grahyta & Agrahyta , shodhana, properties , doses & theraaptic uses of <i>Kankshi</i> CO-5 : Describe Occurance, Synonyms, sources, varieties, Grahyta & Agrahyta , shodhana, marana, properties , doses & theraaptic uses of <i>Hartala</i> CO-6 : Describe Occurance, Synonyms, sources, varieties, Grahyta & Agrahyta , shodhana, marana , sa, properties , doses & theraaptic uses of <i>Manshila</i> CO-7 : Describe Occurance, Synonyms, sources, varieties, Grahyta & Agrahyta , shodhana, marana , sa, properties , doses & theraaptic uses of <i>anjana & Kankustha</i> CO-8 : Describe Physical properties of <i>Uparas</i> CO-9 : Describe Minerological identification of <i>Uparasa</i></p> | | | |
| Description of Sadharan Rasa 7 Hours | Occurance, Synonyms, Natural & artificial sources, varieties, Grahyta & Agrahyta , Toxic effect shodhana, marana , satvapana, properties , doses & theraaptic uses of drugs included in Sadharan rasa <i>Kampillaka, Gauripashan, Kaparda, Navasadar, Agnijar, Girisindura, Hingula, . Middara Shringa</i> | | |
| | | Physical properties of <i>Sadharan rasa</i> | |
| | | | Minerological identification of <i>Sadharan rasa</i> |
| Student should be able to- CO-1: Describe Occurance, Synonyms, sources, varieties, Grahyta & Agrahyta , shodhana, , properties , doses & theraaptic uses of <i>Kampillaka</i> CO-2: Describe Occurance, Synonyms, sources, varieties, Grahyta & Agrahyta , shodhana, doses & theraaptic uses of <i>Gauripashan</i> CO-3: Describe Occurance, Synonyms, sources, varieties, Grahyta & Agrahyta , shodhana, marana , properties , doses & theraaptic uses of <i>Kaparda</i> CO-4 : Describe Occurance, Synonyms, sources, varieties, Grahyta & Agrahyta , shodhana, properties , doses & theraaptic uses of <i>Navasadar</i> CO-5 : Describe Occurance, Synonyms, sources, varieties, Grahyta & Agrahyta , shodhana, marana, properties , doses & theraaptic uses of <i>Agnijar</i> CO-6 : Describe Occurance, Synonyms, sources, varieties, Grahyta & Agrahyta , shodhana, marana , sa, properties , doses & theraaptic uses of <i>Girisindura</i> CO-7 : Describe Occurance, Synonyms, sources, varieties, Grahyta & Agrahyta , shodhana, marana , sa, properties , doses & theraaptic uses of <i>Hingula</i> CO-8 : Describe Physical properties of <i>Sadharan rasa</i> CO-9 : Describe Minerological identification of <i>Sadharan rasa</i> | | | |
| 10. Sudha Varga Dravya 4 Hours | Source, origin and chemical composition, synonyms, pharmacological properties, Shodhana, marana, doses & theraaptic uses of <i>Khatika, Godanti, Dughdhpashan, Badarashma, Shukti Mrigashriranga, ,Shankha, samudraphena, Kukkutanda twak (Hen's egg Shell)</i> | | |

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| | | Physical properties of <i>sudhavarga dravya</i> | |
| | | | Chemical properties of <i>sudhavarga dravya</i> |
| Student should be able to- | | | |
| CO-1: Describe Source, origin and chemical composition, synonyms, pharmacological properties, Shodhana, marana, doses & therapeutic uses of <i>Godanti</i> CO-2: Describe Source, origin and chemical composition, synonyms, pharmacological properties, Shodhana, marana, doses & therapeutic uses of <i>Shukti</i> CO-3: Describe Synonyms, sources, varieties, Grahyta & Agrahyta, shodhana, marana, properties, doses & therapeutic uses of Shankha CO-4: Describe Occurrence, Synonyms, sources, varieties, Grahyta & Agrahyta, shodhana, properties, doses & therapeutic uses of <i>Kukkutanda twak</i> CO-5: Describe Physical properties of <i>sudhavarga dravya</i> | | | |
| 11. Sikhata Varga Dravya 2 Hours | Shodhana, marana, satvapatnam dose, use & indications of <i>Sikhata</i> , Dugdhapashana, Jaharmohara, Vyomashama, Sange Yeshab, Kousheyasham & Akik | | |
| Student should be able to- | | | |
| CO-1: Describe Shodhana, marana, dose, use & indications of <i>Sikhata</i> , Dugdhapashana CO-2: Describe Shodhana, marana, dose, use & indications of Dugdhapashana CO-3: Describe Shodhana, marana, dose, use & indications of Jaharmohara CO-4: Describe Shodhana, marana, dose, use & indications of Kousheyasham & Akik | | | |
| 12. Kshara Varga Dravya 2 Hours | Source, origin and chemical composition, synonyms, physical properties, pharmacological properties, dose, use of <i>Sarja kshara</i> , <i>Yava Kshara</i> , <i>Surya Kshara</i> | | |
| Student should be able to- | | | |
| CO-1: Describe Source, origin and chemical composition, synonyms, physical properties, pharmacological properties, dose, use of <i>Sarja kshara</i> CO-2: Describe Source, origin and chemical composition, synonyms, physical properties, pharmacological properties, dose, use of <i>Yava Kshara</i> | | | |
| 13. Miscellaneous drugs 2 Hours | Occurrence, Synonyms, Natural & artificial sources, varieties, Grahyta & Agrahyta, properties, dose & therapeutic use of Bola, Krishna Bola, Mayurpiccha, Gandhabiroja, & Madhucchishta | | |
| | | Kasturi, Bhoonag, Shilarasa | |
| Student should be able to- | | | |
| CO-1: Describe Occurrence, Synonyms, Natural & artificial sources, varieties, Grahyta & Agrahyta, | | | |

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| <p>properties, dose & therapeutic use of Bola & Krishna Bola CO-2: Describe Occurance, Synonyms, Natural & artificial sources, varieties, Grahyta & Agrahyta, properties, dose & therapeutic use of Mayurpiccha & Madhucchishta CO-3: Describe Occurance, Synonyms, Natural & artificial sources, varieties, Grahyta & Agrahyta, properties, dose & therapeutic use of Kasturi & Bhoonag</p> | | | |
| 14. Dhatu 9 Hours | Number of Dhatu and Updhatu, Concept of Suddha lauha, Puti Lauha & Mishralauha, Varieties, pharmacological properties, source, types, shodhana, marana, doses, therapeutic properties, vishisht yog of- | | |
| | Suddha lauha - Swarana, Rajat, Tamra, Loha | | |
| | Puti Lauha - Nag, Vang, Yashad | | |
| | Mishralauha - Kamsya, Pital, Vartaloha | | |
| | | Physical properties of <i>Dhatu, Upadhatu</i> | |
| | | Chemical properties of <i>Dhatu, Upadhatu</i> | |
| <p>Student should be able to-</p> <p>CO-1: Define Dhatu and Updhatu CO -2: Define the concept of Suddha lauha, Puti Lauha & Mishralauha CO -3 Describe Varieties, pharmacological properties, source, types, shodhana, marana, doses, therapeutic properties, vishisht yog of Suddha Lauha CO -4 Describe Varieties, pharmacological properties, source, types, shodhana, marana, doses, therapeutic properties, vishisht yog of Puti Lauha CO -5 Describe Varieties, pharmacological properties, source, types, shodhana, marana, doses, therapeutic properties, vishisht yog of Mishra Lauha CO -6 Describe Physical properties of <i>Dhatu, Upadhatu</i> CO -7 Describe Chemical properties of <i>Dhatu, Upadhatu</i></p> | | | |
| 15. Ratnas & Uparatnas 6 Hours | Description of Ratnas, definition of term Ratna, Ratna group, uparatna group. Ratnas their relationship with Grahas, Doshas of Ratnas, Mythological origin of Ratna, Varieties, Synonyms, General method for Shodhana and Marana, druty of Ratna, properties, dose, therapeutic uses, vishishta yog of Ratna - <i>Manikya, Mukta, Nilamani, Tarksya, Pushparaga, Vajra, Vaidurya, Gomeda, Pravala</i> | | |
| | Uparatna - <i>Vaikranta, Suryakanta, Chandrakanta, Rajavarta, Perojak Sphatika, Trinkant</i> | | |
| | | Physical properties of <i>Ratna, Uparatna</i> | |
| | | | Chemical |

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| | | | properties of <i>Ratna, Uparatna</i> |
| <p>Student should be able to-</p> <p>CO-1: Define the term Ratna and their relationship with Grahas CO -2: Describe Doshas of Ratnas CO.-3 : Describe Varities, Synonyms, General method for Shodhana and Marana, properties, dose, therapeutic uses & vishishta yog of <i>Manikyā</i> CO.-4 : Describe Varities, Synonyms, General method for Shodhana and Marana, properties, dose, therapeutic uses & vishishta yog of <i>Mukta</i> CO.-5 : Describe Varities, Synonyms, General method for Shodhana and Marana, properties, dose, therapeutic uses & vishishta yog of Praval CO.-6 : Describe Varities, Synonyms, General method for Shodhana and Marana, properties, dose, therapeutic uses & vishishta yog of <i>Tarkshya</i> CO.-7 : Describe Varities, Synonyms, General method for Shodhana and Marana, properties, dose, therapeutic uses & vishishta yog of <i>Pushparag</i> CO.-8 : Describe Varities, Synonyms, General method for Shodhana and Marana, properties, dose, therapeutic uses & vishishta yog of <i>Vajra</i> CO -9 Describe Physical properties of Ratna, Uparatna CO -10 Describe Chemical properties of Ratna, Uparatna</p> | | | |
| <p>16. Visha and Upavisha 3 Hours</p> | Introduction, collection & storage , classification, synonyms, Shodhana Antidotes, uses, therapeutic & toxic doses and formulations of following Visha & Upvisha - Vatsanabha, Kupilu, Jaipala, Dhatura Bija, Bhanga, Bhallataka, Gunja, Arka, Snuhi Kshira , langali, Karavira, Ahiphena and Chitraka mool | | |
| | | Physical properties of <i>Visha ,Upavisha</i> | |
| | | | Chemical Composition of <i>Visha, Upavisha</i> |
| <p>Student should be able to-</p> <p>CO-1: Describe the classification and synonyms of visha & upvisha CO -2: Describe Shodhana Antidotes, uses, therapeutic & toxic doses and formulations of Visha & Upvisha CO- 3 : Describe Physical properties of <i>Visha ,Upavisha</i> CO- 4 : Describe Chemical Composition of <i>Visha,Upavisha</i></p> | | | |
| <p>17. Aushadhi Yoga Gyanam 12 Hours</p> | Ingredients, Method of Preparation, Dose & Therapeutic uses of the Following Formulations – Arogyavardhini Gutika, Karpura Rasa, Kasturi Bharava rasa, Kumar Kalyana Rasa, Garbhapala rasa , Chandraprabha gutika, Chandramrit rasa, Pratapankeshwara rasa, Pravala Panchamrit rasa, Anand bhairava rasa, Yogendra | | |

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| | <p>rasa,Rajmriganka rasa,Laxmivilasa rasa,Vasant Kusumakar rasa,Vatakulantaka rasa Vasant malti rasa,Brihat vata Chintamani rasa,Shankha vati,Swasakuthar rasa,Hinguleshwar rasa,Hemagarbhapottali rasa,Hridarnava rasa,Swarnavanga,Makardhwaja,Ayaskriti evam loha Rasayana,Putpakwavisham Jwarantak loha,Vatavidhvamsan rasa,Kamdhudha rasa,Laghusutsekhar rasa,Navayasa loha,Saptamrita loha</p> | | |
| | | Pharmacopeal Standards of the Ayurvedic Formulations | |

Student should be able to-

- CO-1: Describe Ingredients,Method of Preparation,Dose & Therapeutic uses of – Arogyavardhini Gutika & Chandraprabha gutika
CO-2: Describe Ingredients,Method of Preparation,Dose & Therapeutic uses of Karpura Rasa & Kasturi Bharava rasa
CO-3: Describe Ingredients,Method of Preparation,Dose & Therapeutic uses of Kumar Kalyana Rasa & Garbhapala rasa
CO-4: Describe Ingredients,Method of Preparation,Dose & Therapeutic uses of Chandramrit rasa, Hinguleshwar rasa & Anand bhairava rasa
CO-5: Describe Ingredients,Method of Preparation,Dose & Therapeutic uses of PravalaPanchamrit rasa , Shankha vati, Kamdhudha rasa and Laghusutsekhar rasa.
CO-6: Describe Ingredients,Method of Preparation,Dose & Therapeutic uses of Yogendra rasa
CO-7: Describe Ingredients,Method of Preparation,Dose & Therapeutic uses of Laxmivilasa rasa
CO-8: Describe Ingredients,Method of Preparation,Dose & Therapeutic uses of Vasant Kusumakar rasa, Vasant malti rasa
CO-9: Describe Ingredients,Method of Preparation,Dose & Therapeutic uses of Vatakulantaka rasa and Vatavidhvamsan rasa.
CO-10: Describe Ingredients,Method of Preparation,Dose & Therapeutic uses of Swasakuthar rasa
CO-11: Describe Ingredients,Method of Preparation,Dose & Therapeutic uses of Swarnavanga,Makardhwaja
CO-12: Describe Ingredients,Method of Preparation,Dose & Therapeutic uses of Brihat vata Chintamani rasa and Hridarnava rasa
CO-13: Describe Ingredients,Method of Preparation,Dose & Therapeutic uses of Navayasa loha,Saptamrita loha
CO-14: Describe Pharmacopeal Standards of the Ayurvedic Formulations

18. Brief knowledge of Standardization of Rasaushadhi

Student should be able to-

- CO-1: Describe the methods of Standardization of Rasaushadhi

19. Concept of pharmacovigilience

Student should be able to-

- CO-1: Describe the Concept of pharmacovigilience and its importance

20. Mineralogical Identification

Student should be able to-

CO-1: Describe Mineralogical Identification of rasa drugs

21.

Concept of Nano-Technology in Ayurveda

Student should be able to-

CO-1: Describe Concept of Nano-Technology in Ayurveda