

FACULTY OF INDIAN MEDICINE SYSTEM

SGT UNIVERSITY, GURGAON

RASASHASTRA & BHAISHAJYA KALPANA DEPARTMENT

S.No	Topic	Time	Domain
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.	5Hrs	Must Know
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.	5Hrs	Must Know
3.	Dravya Varga: Amlavarga, Panchamrittika, Panchagavya, Panchamrita, Ksharashtaka, Dravakagana, Mitra panchaka, Rakta varga, Lavanapanchaka.	4Hrs	Desirable to Know
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.	4Hrs	Desirable to Know
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	4Hrs	Desirable to Know

	crucibles e.g. Silica crucible, platinum crucible. Mudra and Sandhi Bandhana.		
6.	Brief description & applications of Chullika, Satwapatana Koshthi, Patala Koshthi, Gara Koshthi, Angarakoshthi and knowledge of various heating appliances viz. Gas stove, Hot plate, Heating mantle, Induction Stove, Hot Air Oven.	4Hrs	Desirable to Know
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.	4Hrs	Desirable to Know
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.	8Hrs	Must Know
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.	8Hrs	Must Know
10.	Brief introduction of quality control , standardization and GMP of Rasaoushadhies	4Hrs	Nice to know
11.	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:		
12	Maharasa Abhraka (Biotite Mica), Vaikrantha, Makshika (Chalco-pyrite), Vimala (Iron Pyrite), Shilajatu, Sasyaka (Peacock ore), Chapala and Rasaka (Sphalerite).	5 Hrs	Must Know
13	Uparasa Gandhaka (Sulfur), Gairika (Red Ochre), Kasisa (Green Vitriol), Kankshi (Alum), Haratala (Orpiment), Manahshila (Realgar), Anjana and Kankustha.	5 Hrs	Must Know
14.	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).	5 Hrs	Must Know
15	Dhatu Swarna (Gold), Rajata (Silver), Tamra (Copper), Loha (Iron), Vanga (Tin), Naga (Lead), Yashada (Zinc), Kamsya (Bronze), Pittala (Brass), Vartaloha. Dhatu -graha sambandha.	5 Hrs	Must Know
16	Ratna Manikya (Ruby), Mukta (Pearl), Pravala (Coral), Tarkshya (Emerald), Pushparaga (Topaz), Vajra (Diamond), Nilam (Sapphire), Gomeda (Zircon or Cinnamone stone), Vaidurya (Cats eye). Ratnapariksha, Ratnadosha, Ratna-graha sambandha.	3Hrs	Must Know
17	Uparatna-	3Hrs	Desirable to

	Vaikranta (Tourmaline), Suryakanta (Sun stone), Chandrakanta (Moon stone), Rajavarta (Lapis lazuli), Perojaka (Turquoise), Sphatikamani (Quartz), Trinakanta, Palanka, Putika, Rudhir.		Know
18	Sudha varga Sudha (Lime stone), Kaparda (Cowries), Shukti (Oyster Shell) , Shankh (Conch Shell), Mrigashringa (Stag horn), Khatika, Godanti (Gypsum) and Samudraphena (Cattle Fish bone), Kukkutandak (Hen's Egg Shell).	4 Hrs	Must Know
19	Sikata varga Sikata (Silica), Dugdhapashana (Talc), Nagapashana / Jaharmohara (Serpentine), Badarshama (silicate of lime), Vyomashma (Sangeyashab - Jade), Kousheyashma (Asbestos) and Akika (Agate).	2 Hrs	Desirable to Know
20	Kshara varga Sarja kshara (Sodium bicarbonate), Yava kshara, Tankana kshara (Borax), Surya Kshara (Potassium Nitrate).	2 Hrs	Desirable to Know
21.	Miscellaneous Mandura, Bola, Dam-ul Akhawayan (Raktabandhini), Kasturi, Bhoonag, Mayurpiccha, Sarjarasa, Madhoochishta.	2 Hrs	Desirable to Know
22.	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, Dhatura, Bhanga, Bhallataka, Gunja, Arka, Snuhi. Langali, Karaveera, Ahiphena and Chitrakmool.	4 Hrs	Desirable to Know

23.	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, Makaradhwaja, Putapakwavaisham Jwarantaka Loha, Vatvidhvamsan Rasa, Kamadugha Rasa, Laghusutshekhara Rasa, Navayasa Loha, Saptamrita Loha, Tamra Parpati, Panchamrita Parpati, Sveta Parpati.	8 Hrs	Must Know
24.	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	2 Hrs	Nice to Know
25. .	History and Chronological (kramika vikasa) development of Bhaishajyakalpana. Concept of Aushadha and Bhesajya.	3 Hrs	Desirable to Know
26. .	Fundamental principles of Bhaishajya Kalpana.	2Hrs	Must Know
27.	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); Grahyaagrahyatva, Nava Puran dravya grahan niyam.	4 Hrs	Desirable to Know
28.	Guidelines and Methods of collection, storage, preservation of Aushadhi dravya. Concept of Saviryatavadhi (shelf life) and stability in ancient and contemporary science.	3 Hrs	Must know
29. .	Bhesajprayogavidhi : Aushadha Matra, Anupana and sahan and Aushadh sevan kaala. (Posology).	3 Hrs	Desirable to

			Know
30. .	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, Guti, Pinda, Modaka, Varti Preparation of Tablets, pills, capsule and Suppositories. Masi kalpana, Lavana kalpana, Kshara kalpana and Kshara sutra.	15 Hrs	Must Know
31. .	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.	5 Hrs	Nice to Know
32.	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.	5 Hrs	Must Know
33.	Sandhana Kalpana and its types: Madya Kalpana, Asava, Arishta, Sura (Prasanna - Kadambari - Medaka - Jagala - Bakkasa), Maireya, Surasava, Shukta, Kanjika, Sauviraka, Tushodaka, Sidhu kalpana their methods of preparation, siddhi lakshana, properties, uses, doses. Takrarishta, Draksharishta, Ashokarishta, Dashamoolarishta, Kumaryasava, Chandanasava.	5 Hrs	Must Know
34.	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.	5 Hrs	Must Know
35.	Bahyopacharartha kalpana (External Applications)-Lepa -Types of Lepa, methods of preparation and mode of application. Udvartan and	5Hrs	Must Know

	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.		
36.	Principles and precautions for preparation of formulations for following:		
37.	Netraupacharartha kalpana (Ophthalmic preparations) Seka, Drava, Pindi, Anjana - Ashchyotana - Tarpana - Putapaka and Vidalaka, Methods of preparation of eye drops, eye ointments.	3Hrs.	Must Know
38.	Nasyopachararth Kalpana Classification of Nasya, Navana, Avapidana, Pradhaman, Marsha and Pratimarsha nasya.	3Hrs.	Must Know
39.	Dhumapanarth kalpana Classification of dhumpaana, Method of preparation of dhumvarti and it's therapeutic uses. Dhupan: Vranadhupan, arshodhupan.	3Hrs.	Must Know
40.	Mukhaprayogarth kalpana Gandoosha - Kavala - Pratisaran, Tooth paste, Tooth powders and Mouth wash.	3Hrs.	Must Know
41.	Basti kalpana Classification, Method of preparation of Niruha and Anuvasana, Basti Therapeutic properties and uses of Basti.	3Hrs.	Must Know
42.	Brief knowledge of Standardization of Ayurvedic formulations- Kastaushadhi.	10Hrs	Nice to Know
43.	Brief introduction of Drug and Cosmetics Act 1940 and Rules 1945.	10Hrs	Desirable to Know
44.	Concept of, Aushadhi Nirmanshala, with respect to Good Manufacturing Practices (GMP) in	10Hrs	Must Know

	accordance to Schedule T.	.	
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Practicals

45	1. Rasa [Parada] Samanya Shodhana of Parada Kajjali Mugdha rasa	10Hrs	Desirable to Know
46	2. Maharasa varga Shodhana of Abhraka Dhanyabhraka nirmana Shodhana of Makshika Shodhana of Shilajatu Shodhana of Sasyaka	10Hrs	Must Know
47	3.Uparasavarga Shodhana of Gandhaka,Shodhana of Gairika,Shodhana of Kasisa Shodhana of Kankshi, Shodhana of Haratala, Rasa manikya nirman , Shodana of Manashila	10Hrs	Must Know
48	4.Sadharana rasa varga Shodhana of Hingula, Sodhana of Navasadar, Shodhana of Kapardika	10Hrs	Must Know
49	5. Sudha Varga Shodhana of Shankha Shodhana of Shukti Shodhana of Pravala mula Shodhana of Godanti	10Hrs	Must Know
50	6. Dhatu varga Samanya Shodhana of Lauha Shodhana of Mandura Samanya Shodhana of Tamra Shodhana of Naga Shodhana of Vanga Shodhana of Yashada	10Hrs	Must Know
51	7. Kshara Varga Shodhana of Tankana	8Hrs	Must Know
52	8.Parpati Preparation of Rasaparpati, Bola Parpati and Swetaparpati	10Hrs	Must Know
53	9. Visha varga Shodhana of Vatsanabha, Bhallataka,	7Hrs	Must Know

	Kupilu, Dhattura beeja, Jayapala, Gunja, Chitrakamoola.		
	PRACTICAL FOR DEMONSTRATION / GROUP PRACTICALS		
54	1. Hingulad rasakrishti (Hingulottha Parada).	3Hrs	Desirable to Know
55	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.	3Hrs	Desirable to Know
56	3. Pishti : 1 Pravala pishti, Jaharmohara / Akika pishti, Trina kantha mani pishti, Mukta pishti.	3Hrs	Desirable to Know
57	4. Druti : 1 Gandhaka druti.	3Hrs	Desirable to Know
58	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	3Hrs	Nice to Know
59	Practical Bhaishajya Kalpana Following practicals to be performed- (Minimum one from each category		
60	Method of preparation, therapeutic uses, dose and anupana of the following 1. Swarasa- Ardraka swarasa, Tulasi swarasa, Kumari Swarasa, Vasa putapaka swarasa	2 Hrs	Must Know
61	2. Kalka- Nimba kalka, Rasona kalka.	2 Hrs	Must Know

62	3. Kwatha- Punarnavasthaka kwatha, Rasna Saphthaka kwatha, Kulattha kwath.	2 Hrs	Must Know
63	4. Hima- Dhanyaka hima, Sarivadi hima .	2 Hrs	Must Know
64	5. Phanta- Panchakola phanta, Yastimadhu Phanta.	2 Hrs	Must Know
65	6. Pramathya- Mustadi pramathya	2 Hrs	Must Know
66	7. Mantha- Kharjuradi mantha	2 Hrs	Must Know
67	8. Aushadh siddha paniya- Shadanga paniya	2 Hrs	Must Know
68	9. Laksha Rasa.	2 Hrs	Must Know
69	10. Arka - Yavani arka, Gulab arka, Misreya arka	2 Hrs	Must Know
70	11. Panaka- Chinchha panaka, Chandan panaka.	2 Hrs	Must Know
71	12. Sharkara- Banapsha sharkara, Nimbu sarkara.	2 Hrs	Must Know
72	13. Churna- Sitopaladi Churna, Hinguwashtaka Churna.	2 Hrs	Must Know
73	14. Gutika- Chitrakadi Gutika, Sanjivani Vati.	2 Hrs	Must Know
74	15. Guggulu-Triphala Guggulu, Kaishora Guggulu.	3Hrs.	Must Know
75	16. Avaleha- Chyavanaprashavaleha, Vasavaleha, Vyaghri Haritaki avaleha,	3 Hrs	Must Know

	Manibadra avaleha.		
76	17. Rasa kriya - Darvi Rasakriya, Guduchi Ghana, Kutaja Ghana.	2 Hrs	Must Know
77	18. Khanda- Haridra khanda, Narikela khanda, Sowbhagya shunti paka	2 Hrs	Must Know
78	19. Satva- Amruta satva,	3Hrs.	Must Know
79	20. Varti- Phala varti, Chandrodaya varthi	2 Hrs	Must Know
80	21. Lavana- Arka lavana, Narikela lavana	3 Hrs.	Must Know
81	22. Masi- Triphala masi, Mayurpiccha Masi	3Hrs.	Must Know
82	23. Ksheerapaka- Arjuna ksheerapaka, Rasona ksheerapaka, Shunthi Ksheerpaka	2 Hrs	Must Know
83	24. Kshara- Apamarga kshara, Snuhi kshara, Ksharasutra.	2 Hrs	Must Know
84	25. Manda, Peya, Vilepi, Yavagu, Krishra, Vesavara	2 Hrs	Must Know
85	26. Yusha - Mudga yusha, Saptamushtika yusha, Kulattha yusha	2 Hrs	Must Know
86	27. Aristha- Kutajarishta, Takrarishta .	2 Hrs	Desirable to Know
87	28. Asava - Kumaryasava, Kanakasava	3 Hrs	Desirable to Know
88	29. Sukta kalpana- Kanji	2 Hrs	Desirable to Know
89	30. Udaka- Tandulodaka	2 Hrs	Must Know
90	31. Upanaha- Atasi Upanaha	2 Hrs	Must Know
91	32. Siktha Taila Nirmaan	2 Hrs	Must Know
92	33. Malahara- Sarjarasa malahara, Gandaka malahara, Cream, Emulsion. Sneha Murchhana - Ghrita Murchana, Taila	2 Hrs	Must Know
93	34. Sneha Kalpana Moorchhana, Ghrita kalpana: Jatyadi ghrita, Triphala ghrita, ksheerashatphala ghrita- Taila kalpana-Panchaguna taila, Arka taila, Bala taila, Jatyadi taila	3Hrs	Must Know

94	35. Taila patana- Bhallataka taila patana, Jayapala taila patana	3 hrs	Must Know
95	36. Shodhana- Guggulu, Hingu.	2 Hrs	Must Know
96	II. Visit of minimum three GMP approved Ayurvedic manufacturing units.	20 Hrs.	Must Know

CURRICULUM PLANNING

S.No.	Topic	Learning objectives (At the end of the session the student should be able to explain)	Teaching Guidelines	Methodology	Time
1.	Definition and etymology of Rasa, History of Rasashastra, Importance of Rasaushadhi, Concept of Rasa-Rasayana, Concept of RaseshwarDarshana. Concept of Rasashala and Rasamandap.	Definition, Chronological evaluation of Rasashastra, Basics regarding Rasa & Rasashala.	Explain all the points with examples and visit to Ayurvedic Pharmacy.	Didactic, SIS, PBL, Students Seminar, Group Discussion	5Hrs
2.	Brief Description and Application of Technical terminologies (Paribhasha): Avapa, Nirvapa, Dhalana, Bhavana, Jarana, Murchana, Shodhana, Marana, Amrutikarana, Lohitikarana, MrutaLoha, SatwaPatana, Druti, Apunarbhava, Niruttha, Rekhapurna, Varitara.	All Basic Paribhasa should be understand.	Explain Shloka And Demonstrate during Practical.	Didactic, SIS, PBL, Students Seminar, Group Discussion, Tutorials, Field Visits/Industrial Visits, Panel Discussion, Workshop	5Hrs
3.	DravyaVarga: Amlavarga, Panchamrittika, Panchagavya, Panchamrita, Ksharashtaka, Dravakagana, Mitrapanchaka, Raktavarga, Lavanapanchaka.	Should Be able to Explain Dravyavarga.	Along with explanation, Identification During prac.	Didactic, SIS, PBL, Students Seminar, Group Discussion, Tutorials, Panel Discussion.	4Hrs
4.	Brief description of Yantras and their application Ulukhala Yantra, Khalwa Yantra, Kachhapa Yantra, Damaru Yantra -	Explain Yantra types and uses.	Importance, Use, Contemporary Knowledge and Modern Development	Didactic, SIS, PBL, Students Seminar, Group Discussion, Tuto	4Hrs

	Vidhyadhara Yantra-Urdhwapatan, Addhapatan & Tiryakpatana Yantra, Jaranartha Tulayantra, Dolayantra, Patalayantra, Palika Yantra, Baluka Yantra, Bhudhara Yantra, Sthali Yantra, Swedana Yantra.		also explain.	rials, Poster Presentation, Role Model, Workshop	
5.	Brief description & application of Musha (Crucible): Samanya Musha, Gostanimusha, Vajra Musha, Mahamusha, Yoga musha, Vrintaka Musha, Malla / Pakwamusha. Different types of crucibles e.g. Silica crucible, platinum crucible. Mudra and Sandhi Bandhana.	Explain Musha And Crucibles.	Importance, Use, Contemporary Knowledge and Modern Development also explain.	Didactic, SIS, PBL, Students Seminar, Teachers Seminar, Group Discussion, Poster Presentation, Role Model, Workshop	4Hrs
6.	Brief description & applications of Chullika, Satwapatana Koshthi, Patala Koshthi, Gara Koshthi, Angarakoshthi and knowledge of various heating appliances viz. Gas stove, Hot plate, Heating mantle, Induction Stove, Hot Air Oven.	Able to explain Chullika, Furnaces, Tem. Variation And Modern Equipment's.	Demonstration Also in Lab.	Didactic, SIS, PBL, Students Seminar, Group Discussion.	4Hrs
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	Explanation of Puta, Types of Puta And Furnace.	Importance, Use, Contemporary Knowledge and Modern Development also explain.	Didactic, SIS, PBL, Students Seminar, Group Discussion, Tutorials, Poster Presentation, Role Model, Workshop	4Hrs

	and pyrometer.				
8.	<p>Knowledge of Parada: Synonyms, Occurrence, natural and artificial sources of Parada, Hingulothaparada, Types of Parada, ParadaDosha: Naisargika, Yougika, Aupadhika (Kanchuka). Grahya-AgrahyaParada, Paradagati, Parada bandha, Shodhana of Parada. Paradasanskara and brief description of Ashtasamskara.</p>	<p>Know Detail About Parad Classical As well as Contemporary Science.</p>	<p>Explanation Of All The points, Explain Shloka.</p>	<p>Didactic, SIS, PBL, Students Seminar, Group Discussion.</p>	8Hrs
9.	<p>Concept of Murchhana and Jarana of Parada, Preparation of Kajjali, Classification of Rasaushadhi: Khalvi rasa e.g. TribhuvanaKeerti Rasa, Parpati Rasa- Rasa Parpati, Kupipakva Rasa- Rasa sindur, Pottali rasa - Hemagarbhapottali. Rasa sevanavidhi and pathya and apathya.</p>	<p>Detail explanation of ChaturvidhRasayan.</p>	<p>Demonstration of Method of Preparation in Practical.</p>	<p>Didactic, SIS, PBL, Students Seminar, Group Discussion, Tutorials, Field Visits/Industrial Visits, Poster Presentation, Role Model, Panel Discussion, Workshop</p>	8Hrs
10.	<p>Brief introduction of quality control , standardization and GMP of Rasaoushadhies</p>	<p>Explain About GMP Certified Pharmacy.</p>	<p>Theory, Attitude towards GMP and visit to GMP Certified Pharmacy.</p>	<p>Didactic, SIS, PBL, Students Seminar, Group Discussion, Field Visits/Industrial Visits,</p>	4Hrs

11.	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 avidheesevanjanyadosha and its management, important formulations of the following:				
12.	Maharasa Abhraka (Biotite Mica), Vaikrantha, Makshika (Chalcopyrite), Vimala (Iron Pyrite), Shilajatu, Sasyaka (Peacock ore), Chapala and Rasaka (Sphalerite).	Explain all the Maharasa	Shloka, And identification Will be explained along with other points.	Didactic, SIS, PBL, Students Seminar, Group Discussion, Poster Presentation.	5 Hrs
13.	Uparasa Gandhaka (Sulfur), Gairika (Red Ochre), Kasisa (Green Vitriol), Kankshi (Alum), Haratala (Orpiment), Manahshila (Realgar), Anjana and Kankustha.	Explain all the Uparasa.	Shloka, And identification Will be explained along with other points.	Didactic, SIS, PBL, Students Seminar, Group Discussion, Poster Presentation.	5 Hrs
14.	Sadharana Rasa – Kampillaka, Gauripashana (Arsenic oxide), Navasadara (Ammonium chloride), Kaparda (Cowry), Agnijara, GiriSindura (Red oxide of Hg), Hingula (Red Cinnabar) and Mriddarashringa (Litharge).	Explain all the Sadharan Rasa	Shloka, And identification Will be explained along with other points.	Didactic, SIS, PBL, Students Seminar, Group Discussion, Poster Presentation.	5 Hrs
15.	Dhatu Swarna (Gold), Rajata (Silver), Tamra (Copper), Loha (Iron), Vanga (Tin), Naga (Lead),	Explain all the Dhatu.	Shloka, And identification Will be explained along	Didactic, SIS, PBL, Students Seminar	5 Hrs

	Yashada (Zinc), Kamsya (Bronze), Pittala (Brass), Vartaloha. Dhatu - grahasambandha.		with other points.	,GroupDiscussion,PosterPresentation.	
16.	Ratna Manikya (Ruby), Mukta (Pearl), Pravala (Coral), Tarkshya (Emerald), Pushparaga (Topaz), Vajra (Diamond), Nilam (Sapphire), Gomeda (Zircon or Cinnamone stone), Vaidurya (Cats eye). Ratnapariksha, Ratnadosha, Ratna-grahasambandha.	Explain all the Ratna	Shloka, And identification Will be explained along with other points.	Didactic, SIS, PBL,StudentsSeminar,GroupDiscussion,PosterPresentation.	3Hrs
17.	Uparatna- Vaikranta (Tourmaline), Suryakanta (Sun stone), Chandrakanta (Moon stone), Rajavarta (Lapis lazuli), Perojaka (Turquoise), Sphatikamani (Quartz), Trinakanta, Palanka, Putika, Rudhir.	Explain all the Ratna	Shloka, And identification Will be explained along with other points.	Didactic, SIS, PBL,StudentsSeminar,GroupDiscussion,PosterPresentation.	3Hrs
18.	Sudhavarga Sudha (Lime stone), Kaparda (Cowries), Shukti (Oyster Shell) , Shankh (Conch Shell), Mrigashringa (Stag horn), Khatika, Godanti (Gypsum) and Samudraphena (Cattle Fish bone), Kukkutandatwak (Hen's Egg Shell).	Explain all the SudhaVarga	Shloka, And identification Will be explained along with other points.	Didactic, SIS, PBL,StudentsSeminar,GroupDiscussion,PosterPresentation.	4 Hrs
19.	Sikatavarga Sikata (Silica), Dugdhapashana (Talc), Nagapashana / Jaharmohara (Serpentine), Badarshama (silicate of lime),	Explain all the SikthavargaDravya.	Shloka, And identification Will be explained along with other	Didactic, SIS, PBL,StudentsSeminar,GroupDisc	2 Hrs

	Vyomashma (Sangeyashab - Jade), Kousheyashma (Asbestos) and Akika (Agate).		points.	ussion,PosterPresentati on.	
20.	Ksharavarga Sarjakshara (Sodium bicarbonate), Yavakshara, Tankanakshara (Borax), Surya Kshara (Potassium Nitrate).	Explain all the Kshara	Shloka, And identification Will be explained along with other points.	Didactic, SIS, PBL,StudentsSeminar ,GroupDisc ussion,Post erPresentati on.	2 Hrs
21.	Miscellaneous Mandura, Bola, Dam-ulAkhawayan (Raktabandhini), Kasturi, Bhoonag, Mayurpiccha, Sarjarasa, Madhoocchishta.	Explain all points.	Shloka, And identification Will be explained along with other points.	Didactic, SIS, PBL,StudentsSeminar ,GroupDisc ussion,Post erPresentati on.	2 Hrs
22.	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, Bhanga, Bhallataka, Gunja, Arka, Snuhi. Langali, Karaveera, Ahiphena and Chitrakmool.	Explain all the Visha.	Shloka, And identification Will be explained along with other points.	Didactic, SIS, PBL,StudentsSeminar ,GroupDisc ussion,Post erPresentati on.	4 Hrs
23.	Aushadhi Yoga Gyanam-ingredients, manufacturing process, and bhesajprayogvidhi. ArogyaVardhiniGutika, Kasturibhairava Rasa, Kumara Kalyana Rasa, GarbhapalaRasa,	Explain Ingredient, Thereputic Dose, Uses etc.	Clinical aspect also explained.	Didactic, SIS, PBL,StudentsSeminar ,GroupDisc ussion.	8 Hrs

	<p>ChandraprabhaVati, Chandramrita Rasa, Pratapalankeshwara Rasa, Pravalapanchamrita Rasa, Anandbhairava Rasa, Yogendra Rasa, Laxmivilas Rasa, Vasantakusumakara, Vasantamalati Rasa, BrihatVataChintamani Rasa, Shankhavati, Shwaskuthara Rasa, Hinguleswara Rasa, Hemagarbhapottali, Hridyarnava Rasa, Swarnavanga, Makaradhwaja, PutapakwavaishamJwarantakaL oha, Vatvidhvamsan Rasa, Kamadugha Rasa, Laghusutshekhar Rasa, NavayasaLoha, SaptamritaLoha, TamraParpati, PanchamritaParpati, Sveta Parpati.</p>				
24.	<p>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</p>	<p>Know The importance of Pharmacovigil ance.</p>	<p>Explain importance of vigilance.</p>	<p>Didactic, SIS, PBL,Stude ntsSeminar ,Group Discussion.</p>	<p>2 Hrs</p>
25.	<p>History and Chronological (kramikavikasa) development of Bhaishajyakalpana. Concept of Aushadha and Bsheshaja.</p>	<p>Explain Chronological Evaluation</p>	<p>Explain Importance of the topic.</p>	<p>Didactic, SIS,PBL,St udentsSemi nar,Group Discussion.</p>	<p>3 Hrs</p>
26.	<p>Fundamental principles of BhaishajyaKalpana.</p>	<p>Explain the basic principle</p>	<p>Concept Behind Basic principle.</p>	<p>Didactic, SIS, PBL,Stude ntsSeminar ,GroupDisc</p>	<p>2Hrs</p>

				ussion.	
27.	Study of Ancient and Contemporary systems of 'Maana' (Units of measurement), Shushka - ardra –drava-dravyagrahanniyam (Rules of measures of dry, fresh, liquid drugs); Grahyagrahyatva, Nava Purandravyagrahanniyam.	Mana Paribhasa	Explain Classical And Modern View	Didactic, SIS, PBL, Students Seminar, Group Discussion, Poster Presentation.	4 Hrs
28.	Guidelines and Methods of collection, storage, preservation of Aushadhidravya. Concept of Saviryatavadhi (shelf life) and stability in ancient and contemporary science.	Explain about Methods of collection, storage, preservation of Aushadhidravya. a. Concept of Saviryatavadhi (shelf life) and stability in ancient and contemporary science.	Explain Modern Techniques also.	Didactic, SIS, PBL, Students Seminar, Group Discussion, Field Visits/Industrial Visits.	3 Hrs
29.	Bheshajprayogavidhi :AushadhaMatra, Anupana and sahanpan and Aushadhsevankaala. (Posology).	Uses of Rasosadhi	Explain Clinical Aspect also.	Didactic, SIS, PBL, Students Seminar, Group Discussion.	3 Hrs
30.	Panchavidhakashayakalpana 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, Guggulukalpana, Vati, Guti, Pinda, Modaka, Varti Preparation of Tablets, pills, capsule and Suppositories. Masikalpana, Lavanakalpana,	Explain Primary and Secondary Kalpana.	Conduct Theory and practical's	Didactic, SIS, PBL, Students Seminar, Group Discussion, Poster Presentation.	15 Hrs

	Ksharakalpana and Kshara sutra.				
31.	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.	Explain Machine used in Pharmacy.	Theory and demo of Machines Should be explained.	Didactic, SIS, PBL, Students Seminar, Group Discussion, Tutorials, Field Visits/Industrial Visits.	5 Hrs
32.	Snehakalpana :Sneha yoni, Types of Sneha, Snehamurchanavidhi, Snehapakavidhi, patrapaka, types and their use. Sneha siddhi lakshana, dose, Preparation and uses of TriphalaGhrita, Bramhighrita, Narayana taila, Anutaila.	Detail explanation of snehaKalpana	Theory and practicals Conduction.	Didactic, SIS, PBL, Students Seminar, Group Discussion.	5 Hrs
33.	SandhanaKalpana and its types: MadyaKalpana, Asava, Arishta, Sura (Prasanna - Kadambari - Medaka - Jagala - Bakkasa), Maireya, Surasava, Shukta, Kanjika, Sauviraka, Tushodaka, Sidhu kalpana their methods of preparation, siddhi lakshana, properties, uses, doses. Takrarishta, Draksharishta, Ashokarishta, Dashamoolarishta, Kumaryasava, Chandanasava.	Able to explain Method of Preparation, Uses, Dose, Explanation etc.	Explain clinical Aspect also.	Didactic, SIS, PBL, Students Seminar, Group Discussion.	5 Hrs
34.	Kritanna and AushadhisiddhaannaKalpana : Definition of Kritanna, Concept of Pathya and Apathya, Yavagu –types of yavagu, Manda, Peya, Vilepi, Anna, Bhakta, Odan, Yush - types, Krishara, Mansa rasa,	Explain Kritanna and AushadhisiddhaannaKalpana	Explain clinical Aspect also.	Didactic, SIS, PBL, Students Seminar, Group Discussion.	5 Hrs

	Vesavara, KhadKamblika, Raga, Shadava, Dadhi and TakraVarga – Takra, Udasvita, Katvar, Mathita, Chhachika.				
35.	Bahyopachararthakalpana (External Applications)-Lepa- Types of Lepa, methods of preparation and mode of application. Udvartan and Avachurnan, Method of preparation of SikthaTaila, Malahara – SarjarasaMalahara, GandhakMalahara, Upanaha, Atasiupanaha, Shatadhouta and SahastradhoutaGhrita. Brief introduction of semi solid dosage forms- Ointments, Creams, Emulsions, Gels, Lotions.	Explain Bahyopachararthakalpana	Demonstrate Method of Preparation.	Didactic, SIS, PBL, Students Seminar, Group Discussion.	5Hrs
36.	Principles and precautions for preparation of formulations for following:				
37.	Netraupachararthakalpana (Ophthalmic preparations) Seka, Drava, Pindi, Anjana - Ashchyotana - Tarpana - Putapaka and Vidalaka, Methods of preparation of eye drops, eye ointments.	Explain Netraupachararthakalpana (Ophthalmic preparations)	Demonstrate Method of Preparation.	Didactic, SIS, PBL, Students Seminar, Group Discussion.	3Hrs.
38.	NasyopachararthKalpana Classification of Nasya, Navana, Avapidana, Pradhaman, Marsha and Pratimarshanasya.	Explain NasyopachararthKalpana	Demonstrate Method of Preparation.	Didactic, SIS, PBL, Students Seminar, Group Discussion.	3Hrs.
39.	Dhumapanarthkalpana Classification of dhumpaana, Method of preparation of dhumvarti and its therapeutic uses. Dhupan: Vranadhupan,	Explain Dhumapanarthkalpana	Demonstrate Method of Preparation.	Didactic, SIS, PBL, Students Seminar	3Hrs.

	arshodhupan.			,Group Discussion.	
40.	Mukhaprayogarthkalpana Gandoosha - Kavala - Pratisaran, Tooth paste, Tooth powders and Mouth wash.	Explain Mukhaprayogarthkalpana	Demonstrate Method of Preparation.	Didactic, SIS, PBL, Students Seminar, Group Discussion.	3Hrs.
41.	Bastikalpana Classification, Method of preparation of Niruha and Anuvasana, Basti Therapeutic properties and uses of Basti.	Explain Bastikalpana	Demonstrate Method of Preparation.	Didactic, SIS, PBL, Students Seminar Group Discussion.	3Hrs.
42.	Brief knowledge of Standardization of Ayurvedic formulations- Kashaushadhi.	Explain Standardization Techniques.		Didactic, SIS, PBL, Students Seminar, Group Discussion, Tutorials, Field Visits/Industrial Visit.	10Hrs.
43.	Brief introduction of Drug and Cosmetics Act 1940 and Rules 1945.	Explain Drug and Cosmetics Act 1940 and Rules 1945.		Didactic, SIS, PBL, Students Seminar, Teachers Seminar, Group Discussion,	10Hrs.
44.	Concept of, AushadhiNirmanshala, with respect to Good Manufacturing Practices (GMP) in accordance to Schedule T.	Explain Concept of, AushadhiNirmanshala, with respect to Good Manufacturing Practices (GMP) in		Didactic, SIS, PBL, Students Seminar, Group Discussion, Field Visit.	10Hrs.

		accordance to Schedule T.			
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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 VishwanathDwivdei
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. Rasayan Sara Vaidya Shyam Sunderacharya Vaishya
26. Rasendra Sampradaya Vaidya Hajari Lal Sukul
27. Rasendra Sara Sangraha Vaidya Gopal Krishna
29. Vaidyak Paribhasa Pradeep (Hindi Translation) Dr. Indradev Tripathi
30. Sharangadhara Samhita Dr. Radhakrishna Parashar
31. Bharatiya Bhaishajya Kalpana Vigyana Gananath Vishwanath Dwivedi

32. Bhaishajya Kalpana Vijnanam Dr. K Ramachandra Reddy
33. Rasa Shastra (English) Prof. Damodar Joshi
34. Rasa Ratna Samuchchaya (English) Prof. Damodar Joshi
35. Rasendra Chintamani (Hindi) Prof. Siddhinandan Mishra
36. Ayurvedic formulary of India
38. Ayurvedic Pharmacopoeia of India , CCRAS
39. Bhaishajya Kalpana Vigyan Siddhi Nandan Mishra
40. Textbook of Rasashasra Dr. K Ramachandra Reddy.
41. Ashadhayoga Vigyanam Dr. K. Ramachandra reddy
42. Vaidyaka Paribhasha Pradipa (English Translation) Dr. K. Ramachndra Reddy & Dr. P. Suresh
43. Relevant parts of Brihatrayee
44. Text book of Bhaishajya Kalpana - Dr Shobha G Hiremath
45. Text Book of Rasa Shastra Dr P H C Murthy
46. Rasa Chandashu Prof S S Savirkar (CCRAS Publication)
- 47 .Bhaishjya Ratnawali Prof S N Mishra
- 48 Yoga Ratnakar

Note:

Theory Two papers- 100 marks each
Lectures-200 hrs
Practicals-200 hrs
Practical/Viva voce – 200 marks
Total marks - 400