

DRAVYAGUNA VIGYAN

Theory-400 Marks (100 Each)

Practical and Viva voce – 100 Marks

PAPER-I

100 Marks

NAMARUPA VIGYANA (AYURVEDA & MORDERN PHARMACOGNOSY)

Part-A

50 Marks

1. Importance of Namagyan of Dravya, origin of Namarupagyan of Aushadhi in veda, etymological derivation of various names and synonyms of Aushadhi. **(with meaning)**
2. Rupagyan in relation to Aushadhi.
3. Basonym and Synonyms of dravyas(Aushadha&Ahara) mentioned in vedic compendia, Brihatrayee, Bhavaprakash and Rajanighantu. **(Synonyms in Bhavaprakashnighantu should be focused).**
4. Distinguishing morphological characteristics features (swaroopa) of medicinal plants listed in Ayurvedic pharmacopoeia of india (API).

MUST TO KNOW PLANTS

Sr. No.	Plant name	Sr. No.	Plant name	Sr. No.	Plant name
1	Ahiphen	66	Indravaruni	131	Patala
2	Ajmoda	67	Jirak	132	Palasha
3	Amalaki	68	Jambu	133	Parpat
4	Aaragvadha	69	Jayapal	134	Pippali
5	Arka	70	Jatamansi	135	Pippalimula
6	Asana	71	Jatiphala	136	Plaksha
7	Ashoka	72	Jyotishmati	137	Priyala
8	Ashwagandha	73	Jati	138	Prushniparni
9	Ashvattha	74	Kankol	139	Pushkarmula
10	Atasi	75	Kampillak	140	Punarnava
11	Atibala	76	Kantakari	141	Parasikayavani
12	Ativisha	77	Kanchanar	142	Pudina
13	Akarakarabh	78	Karavir	143	Rasna
14	Apamarga	79	Karkatshringi	144	Rasona
15	Aparajita	80	Karpasa	145	Rudraksha
16	Adrak	81	Khadira	146	Sariva
17	Arjuna	82	Kiratatikta	147	Shankhapushpi

18	Agnimanth	83	Krishnajirak	148	Saptaparni
19	Amra	84	Kushtha	149	Shatapushpa
20	Aralu	85	Kumari	150	Shigru
21	Asthishrunkhala	86	Kutaj	151	Sahachar
22	Atmagupta	87	Kadamba	152	Shaka
23	Babbul	88	Kakamachi	153	Shalaparni
24	Bakuchi	89	Karanj	154	Shalmali
25	Bala	90	Karavellak	155	Shati
26	Bibhitak	91	Katuki	156	Saral
27	Bijapura	92	Kokilaksha	157	Sarshapa
28	Bilva	93	Kamal bheda	158	Shatapatrika
29	Bhallatak	94	Katphala	159	Shinshapa
30	Bhringaraj	95	Koshataki	160	Shirisha
31	Bharangi	96	Karchur	161	Surana
32	Bhanga	97	Katak	162	Shyonyaka
33	Bramhi	98	Kushmanda	163	Sarja
34	Bhruhathi	99	Kulattha	164	Shatavari
35	Changeri	100	Kulanjana	165	Shrungatak
36	Chakramarda	101	Keshar /Kumkum	166	Sarpagandha
37	Chandrashur	102	Lavanga	167	Tagar
38	Champaka	103	Latakaranj	168	Trivrutta
39	Chandanbheda	104	Lajjalu	169	Tulasi
40	Chincha	105	Langali	170	Tailaparni
41	Chitrak	106	Lodhra	171	Twak
42	Chavya	107	Madanphal	172	Udumbar
43	Chopachini	108	Madhuka	173	Ushir
44	Daruharidra	109	Marich	174	Utangan
45	Danti	110	Manjishtha	175	Vacha
46	Dhanyaka	111	Mashaparni	176	Varahi
47	Dhataki	112	Musta	177	Varun
48	Draksha	113	Madayantika	178	Vasa
49	Durva	114	Mahanimba	179	Vatsanabha
50	Dadima	115	Mandukaparni	180	Vruddhadaru (Bastantri)
51	Devadaru	116	Mayaphal	181	Vishamushti (Kupilu)
52	Dhattura	117	Mishreya	182	Vidarikanda
53	Dhanvayasa	118	Mudgaparni	183	Yava
54	Dravanti	119	Meshashringi	184	Yavani
55	Dugdhika	120	Methika	185	Yashtimadhu
56	Eranda	121	Nimba		
57	Ela	122	Nagavalli		
58	Guggul	123	Nagakeshar		
59	Gunja	124	Narikela		
60	Gambhari	125	Nyagrodha		
61	Gokshur	126	Nimbuk		
62	Guduchi	127	Nirgundi		
63	Haritaki	128	Paribhadra		
64	Haridra	129	Pashanbheda		
65	Hingu	130	Patha		

NICE TO KNOW PLANTS

1. Meaning (Sarthaktva) of Synonyms related to External morphology.

2. Basonyms& Synonyms

Eg. Kasheruka- Balya ,Bruhan

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|-----------------------------------|------------------------------|-------------------|
| 1. KULATTHA | 26. TALAMULI | 51. ISHVARI |
| 2. SWARNAPATRI | 27. TEELA | 52. KAPITTHA |
| 3. TAMALAKI | 28. UTANGAN | 53. HARENUKA |
| 4. AKSHOTAKA | 29. VRUSHCHIKALI | 54. ROHISHA |
| 5. VYAGHRANAKHI | 30. ANKOT | 55. KARMARDA |
| 6. CHAVYA | 31. BHURJAPATRA | 56. KASTURILATIKA |
| 7. IKSHU | 32. GAVEDHUKA | 57. KHARJURA |
| 8. KADAMBA | 33. GUNDRA | 58. NILI |
| 9. MULAK | 34. HINGUPATRI | 59. PRIYANGU |
| 10. PRASARANI | 35. KALIYAK | 60. PILU |
| 11. TEJOVHA | 36. PARISH | 61. RUDRAKSHA |
| 12. GOJIVHA | 37. KARVELLAK | 62. SAPTALA |
| 13. SAHADEVI | 38. KEBUKA | 63. TALA |
| 14. KADALI | 39. ELAVALUKA(CONTRAVERSIAL) | 64. UPAKUNCHIKA |
| 15. KAKAJANGHA | 40. KHATMI | 65. UTPALA |
| 16. KAKANASIKA
(VRUSHCHIKA) | 41. MURVA | 66. TINDUKA |
| 17. BADAR
(ALL TYPE) | 42. ASHTAVARGA | |
| 18. TRINAVARGA
(ALL GRAMINAE) | 43. KUMBHA | |
| 19. SAMUDRAPHALA | 44. LAVALI | |
| 20. CHAKRAMARDA | 45. AMRAHARIDRA | |
| 21. SAIREYAK | 46. AMRATAKA | |
| 22. KARCHURA | 47. IRIMEDA | |
| 23. KATAK | 48. BIMBI | |
| 24. PATRANGA | 49. CHIRBILVA | |
| 25. VIKANKAT | 50. PATTURA | |

5. Knowledge of Anuktadravya(Extra – pharmacopioial drugs) with regards to Namarupa.

6. Sandighdhravya (controversial drugs) vinischaya.

Part-B:

50 Marks

1. Pharmacognostical study of different parts of the plants with reference to Macroscopic and microscopic study and Qualitative and Quantitative analysis like foreign matter, extractive (water and alcohol), ash value, acid insoluble ash and TLC separation. (**Kanda(Guduchi, Apamarga), Patra (Vasa,Markandika), Pushpa (Lavang, Nagapushpa), Phala (Pippali,**

Bibhitaka), Beeja(Vidanga, Kuchala), Tvak(Arjuna, Kutaja), Mula(Shatavari, Ashwagandha), Niriyasa(Hingu, Guggul).

2. Methods of drugs Standardization and Quality control.
3. Knowledge of biodiversity, endangered medicinal species.
4. Knowledge of TKDL, Introduction to relevant portions of following Acts – Drugs and Cosmetic Act, Drug & Magic Remedies Act, FSSA, AFA, Wildlife & Biodiversity Acts & Intellectual property Right (IPR) and Regulations pertaining to Import and Export of Ayurvedic Drugs.
5. Knowledge of tissue culture techniques.
6. Knowledge of Genetically Modified Plants.
7. Knowledge of advances in cultivations of medicinal plants.

PAPER-II

100 Marks

GUNA KARMA VIGYAN (AYURVEDIC & MORDERN PHARMACOLOGY)

Part-A:

50 Marks

1. Fundamental principles of drug action in Ayurveda
2. Detailed Study of rasa-guna-virya-vipaka-prabhava and karma with their applied aspects and views of commentators (Chakrapanidatta, Dalhana, Arunadatta, Hemadri, and Indu) on them.
3. Comprehensive study of karma as defined in Brihatrayee&Laghutrayee.
4. Detailed study of guna& karma of dravyas listed API and BhavaprakashaNighantu along with current research review.
5. Detailed study of aharadravya ,aharavarga and kritannavarga described in Brihatrayee and various nighantus. **(Especially Bhavaprakash&Kaiyadevnighantu)**
6. Knowledge of guna and karma of anuktadravyas. **(Only karma should be asked not guna of anuktadravyas).**

Part-B:

50 Marks

1. Fundamental Principles of General pharmacology
2. Modern pharmacological principles and knowledge of drugs acting on various systems.
3. Basic knowledge on experimental pharmacology for the evaluation of – analgesic, antipyretic, anti inflammatory, anti diabetic, anti hypertensive, hypo lipidemic, anti ulcer, cardio protective, hepatoprotective, diuretics, adaptegens, CNS activities, anti microbial and antimycotic activities.
4. Studies on changes occurring in purification of poisonous plants drugs.

PAPER-III

100 Marks

PRAYOGAVIGYAN (PHARMACOTHERAPEUTICS/ CLINICAL PHARMACOLOGY)

Part-A:

75 Marks

1. BhaishajyaprayogaSiddhant [Principles of drug administration]-BhaishajyaMarga (routes of drug administration), Vividhakalpana(dosage forms), Principles of Yoga Vijnan (compounding), Matra (dosage), Anupana(Vehicle), AushadhaSevanakal,(schedules of drug administration), Sevankalavadhi (duration of drug administration), Pathyapathya (Do's & Don'ts), Complete Prescription writing (SamagraVyavasthapatraka).
2. Amayikaprayoga(therapeutic uses) of important plants described in Brihatrayee, chakradatta, Yoga ratnakar, and Bhavaprakash.
3. Samyoga- viruddhaSiddhanta and its importance with examples.

Part-B:

25 Marks

1. Knowledge of Pharmaco-vigilance in Ayurveda & modern medicine.
2. Adverse drugreactions & drug interaction of medicinal plants.
3. Knowledge of clinical pharmacology and clinical drug research as per GCP guidelines.
4. Knowledge of Pharmacogenomics.

PAPER- IV

100 Marks

NIGHANTU & YOGA VIGYANA (MATERIA MEDICA & FORMULATIONS)

Part-A:

75 Marks

1. Etymology of Nighantu, their relevance, utility and silent features.
2. Details of the following Nighantus with regards to auther's name, period,and content- Paryayaratnamala, DhanvantariNighantu, Hridayadipakanighantu, Ashtanganighantu, Rajanighantu, Siddhamantranighantu, Bhavaprakashanighantu, Madanpalanighantu, Rajavallabhanighantu, MadhavaDravyaguna, kaiyadevanighantu, shodhalanighantu, shaligramnighantu, NighantuRatnakar, Nighantuadarsha,andPriyaNighantu.
3. Detailed study of EkalaAushadhakalpana(manufacturing of dosage forms of single drugs) mentioned in Sharangadharasamhita and Ayurvedic Formulary of india (AFI).
4. Dashemani and Agryasangraha of Charak and Vagbhat should be included.

Part-B

25 Marks

1. General awareness on aharayogi(Nutraceuticals), soundaryaprasadana (cosmoceutical), food additives, excipients etc.
2. Knowledge of Plant extracts, colouring and flavouring agents and preservatives.
3. Knowledge of pharmacopoeias of different countries- API, BHP.

4. Knowledge of important scientific publications of various Departments & ministries of Govt. of India – like department of AYUSH, CCRAS, RAV, ICMR, CSIR etc.

Syllabus of the Practical training of part two M.D.(Ayu) – Dravyaguna

1. Study Tours:

Field identification of medicinal plants through at least five local Dravyaguna study tours. Within the state and one study tour out of state and preparation of minimum 50 herbarium sheets along with prayojyanga (raw drug). Field visit should also include demonstration of cultivation practices of important medicinal plants.

2. Evaluation of Crude Drugs:

Macro and micro-scopic methods of examining three drugs of each of different useful parts of plants, including their powders.

3. Phytochemical evaluation of raw material:

Qualitative and Quantitative analysis like foreign matter, extractive (water and alcohol), ash value, acid insoluble ash and TLC separation of various parts of minimum two plants of Ayurvedic Pharmacopoeia of India.

4. Pharmacology:

- Rasa nirdharana by Taste Threshold method of minimum one drug for each of rasas.
- Observation of animal experimentation models (both in vitro and in vivo) for any five pharmacological activities cited in paper II.

5. Practical Training-

a) Posting for minimum one month in each of the following units-

- Quality control laboratory of nearest pharmacy/institution for crude drug identification, adulterants and substitutes & understanding standardization techniques.
- Experimental Pharmacology Laboratory for developing skill in animal experimentation.

b) Regular clinical training in the Teaching hospital for submission of record of Ekala AushadhiPrayoga(single drug trial/clinic-pharmacological studies.) &Adverse drug reaction (ADR).

6. Dissertation

A Dissertation, as per the approval of Departmental Research Committee/Competent Committee for the purpose, be prepared under the guidance of approved supervisor in

Dravyaguna and submitted 06 months before the final examination. The approval of Dissertation shall be pre-requisite for appearing in the final examinations.

7. Post Graduate scholar is expected to present minimum two scientific papers in National/ international seminars during the course of study.

8. Post Graduate scholar is expected to publish / get accepted at least one paper in journal as per PG regulations under the supervision of guide.

Pattern of Practical Examination-(CCIM)

100 Marks

1. Herbarium	-5 Marks
2. Pharmacognosy Practical Record	-5 Marks
3. Pharmacology Practical Record	-5 Marks
4. Clinical Records	-5 Marks
5. Practical Examination (Identification of green and dry raw drugs, Microscopic Examination, EkalaushadhaPariksha.	-30 Marks
6. Thesis Presentation	-10 Marks
7. Viva voce	-40 Marks

Reference Books-

1. RigvedasyaAushadhiSuktam -sayanaBhashyaSahitam
2. Relevant portion of classical texts of charak, sushrut and Vagbhata
3. All available Nighantus
4. DhanvantariNighantuRajanighantuSahit
5. Sharangadharsamhita
6. Yogaratnakar
7. Dravyagunavigyanam -YadavjiTrikamji Acharya
8. Dravyagunavigyanam - AcharyaPriyavat Sharma
9. Aushadhigunavigyanam - Pt. VishvanathDwivedi
10. KriyatmakAushadhParichayaVigyan - Pt. VishvanathDwivedi
11. AbhinavButiDarpana - RoopalalVaishya
12. Aushadhiguadharmashashtra - Pt. GangadharShashtriGune
13. BhavaprakashaNighantu - Dr. K.C. Chunekar
14. Vedon Main dravyagunashashtra -VishvanathDwivedi
15. NighantuAdarshPurvardha&Uttarardha -BapalalVaidya
16. UnaniDravyagunaAdarsha - Hakim Daljit Singh
17. AyurvedkiAushadhiyanAurUnka Vargikaran - VishvanathDwivedi
18. AushadhiVigyanShashtra - VishvanathDwivedi
19. Glossary of vegetable drugs in Bruhatrayi - ThakarBalvant Singh &Chunekar

20. Some Contravertial drug in Indian Medicine -Dr. BapalalVaidya
21. Books on Dravyaguna by conemporaryauthars
22. Books on Pharmacognosy
23. Books on General, Experimental & clinical Pharmacology
24. Ayurvedic Pharmacopoeia of India & Other Pharmacopoeias of the world
25. Indian Pharmacopoeia
26. All the classical Text related to medicinal plants
27. All the scientific Publications on Medicinal Plants
28. Journals on Medicinal Plants
29. Different Flora.