

**BHARATI VIDYAPEETH**  
**(DEEMED TO BE UNIVERSITY), PUNE, INDIA**  
**PhD Entrance Test – 2023**

**SECTION-II: Rasashastra and Bhaishajyakalpanavigyan - 50 Marks**

**PART-A**

1. Concept and principles of formulation development of Ayurvedic herbal and herbomineral(rasaushdhies) drugs. (Samskara).Concept of Bhavana, Mardana, Jarana and Murchana. Concept of Shodhan, Marana and Puta, Satva and Druti,
2. Classical and Contemporary concepts of Collection, selection criteria (graahyaagraahyatva) methods of storage and preservation of different fresh and dry raw herbal and mineral drugs (Aushadhivavyas) and their shelf life (SaviryataAvadhi)
3. Various dosage forms –
  - a. Internal route- PanchavidhaKashaya (five basic dosage forms), Churna (powders),Avaleha, Gutika (tablets), Guggulu , Sneha Kalpana, Sandhana kalpana, shuddha dravya pishti, bhasma, satva, druti, and various compound formulations from khalvi, parpati, pottali and kupipakwa category.
  - b. External route (Bahya Prayogartha Kalpana)- lepa, malhar etc. Basti Kalpana.
4. Detailed knowledge of Posology (aushadhsevanvidhi) -routes of drug administration. Guidelines for dose (Aushadhamatra), Anupana and Sahapana, Time of drug admin (AushadhaSevana Kala), duration (kalavadhi), Compatible and incompatible food (Pathya-Apathya)
5. Detailed knowledge of manufacturing including Standard Operating Procedures of processing (SOP), Pharmacopeia standards, storage, shelf life, therapeutic efficacy, dose, anupana, antidote of Bhasmas and Pishtis and also of following formulations:
  - a. **Kharaliya rasa:**Shwasakuthara Rasa, Tribhuvanakirti Rasa, Higuleshwara Rasa, Anandabhairava Rasa, MahaLakshmilasa Rasa, Vasnatakusumakara Rasa, Vasantamalti Rasa, Brihatvatachintamani Rasa, Laghusutashekhar Rasa, Sutashekhar Rasa, PravalaPanchamrita, GandhakaRasayanaPradarantaka Rasa ArogyavardhiniVati
  - b. **Kupipakwa Rasa:** Rasa Sindura, Makaradhwaja
  - c. **Parpati Rasa :** Rasa Parpati, LohaParpati,
  - d. **Pottali Rasa:** Rasagarbhapottali, Hemagarbhapottali,
  - e. **LohaevamManduraKalpa:** Ayaskriti, LohaRasayana
  - f. **Taila** – Narayan taila, Baldyataila
  - g. **Asavarishta-Kumariasav,** Drakshasava
  - h. **Choorna-Sitopaladi,** Gangadhar
  - i. **Guggulu** –Triphala, Simhnad
  - j. **Avaleha-Chavanprash,** Vyaghriharitaki
  - k. **Druti** – Gandhakdruti
  - l. **Basti**– Madhutailik, Yapan
  - m. **Kshar** – apamarga, varangak
  - n. **Lavan** – arkalavan, narikelalavan
  - o. **Mashi-** triphala

6. Kritanna and Bshesaja Siddha Anna Kalpana, Aharopayogi varga, concept of medicinal and functional food, dietary supplements and nutraceuticals etc.

## **PART-B**

7. **Solid dosage Forms: Powders:** Size reduction, separation techniques, particle size determination, principles of mixing. **Tablets:** Methods of tableting, suppositories, pessaries and capsules, sustained release dosage forms.
8. **Semisolid dosage forms,** emulsions, suspensions, creams and ointments, sterilization of ophthalmic preparations.
9. **Liquids:** Clarified liquid, syrup, elixir, filtration techniques
10. General Pharmacology:
  - a) Principles of Pharmacology, Pharmacodynamics & Pharmacokinetics: Absorption, distribution, Metabolism & excretion, mechanism of action, dose determination and dose response, structure activity relationship.
  - b) Routes of drug administration
  - c) Factors modifying drug effect, Bioavailability and Bioequivalence, drug interactions, adverse drug reaction and drug toxicity
  - d) Preclinical evaluation: experimental pharmacology [bioassay, in vitro, in vivo, cell line studies] animal ethics.
11. Clinical pharmacology: Evaluation of New Chemical Entity – phases and methods of clinical research. Ethics involved in human research.
12. Detailed Knowledge of Pharmacovigilance – National and International Scenario. Pharmacovigilance of Ayurvedic Drugs
13. Good Manufacturing Practices related to Ayurvedic drug industry. Patenting and Intellectual Property Rights.
14. Laws Governing Ayurvedic drugs
  - i. Relevant regulatory provisions of Ayurvedic drugs in Drug and Cosmetics Act - 1940 and Rules - 1945
  - ii. Laws pertaining to Drugs and Magic remedies (Objectionable Advertisement) Act - 1954.
  - iii. Prevention of Food Adulteration (PFA) act.
  - iv. Food Standards and Safety Act - 2006
  - v. Laws pertaining to Narcotics
  - vi. Factory and Pharmacy Acts
  - vii. Consumer Protection Act -1986
15. Regulatory Affairs related to International Trade and Practices of Ayurvedic Drugs

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