M.D./M.S.-AYURVEDA

PRELIMINARY PAPER-I
RESEARCH METHODOLOGY AND MEDICAL STATISTICS

PART-A
RESEARCH METHODOLOGY

1 Introduction to Research

A. Definition of the term research
B. Definition of the term anusandhan
C. Need of research in the field of Ayurveda

2 General guidelines and steps in the research process

A. Selection of the research problem
B. Literature review: different methods (including computer database) with their advantages andlimitations
C. Defining research problem and formulation of hypothesis
D. Defining general and specific objectives
E. Research design: observational and interventional, descriptive and analytical, preclinical andclinical, qualitative and quantitative
F. Sample design
G. Collection of the data
H. Analysis of data.
I. Generalization and interpretation, evaluation and assessment of hypothesis.
J. Ethical aspects related to human and animal experimentation.
K. Information about Institutional Ethics Committee (IEC) and Animal Ethics Committee (AEC) and their functions. Procedure to obtain clearance from respective committees, including fillingup of the consent forms and information sheets and publication ethics.

3 Preparation of research proposals in different disciplines for submission to funding agencies taking EMR-AYUSH scheme as a model.

4. **Scientific writing and publication skills**.

a. Familiarization with publication guidelines- Journal specific and CONSORT guidelines.
b. Different types of referencing and bibliography.
c. Thesis/Dissertation: contents and structure
d. Research articles structuring: Introduction, Methods, Results and Discussions (IMRAD)

5 **Classical Methods of Research**. **Tadvidya sambhasha, vadmarga and tantrayukti** Concept of Pratyakshadi Pramana Pariksha, their types and application for Research in Ayurveda.

Dravya-, Guna-, Karma-Parikshana Paddhati
Aushadhi-yog Parikshana Paddhati
Swastha, Atura Pariksha Paddhati
Dashvidha Parikshya Bhava
Tadvidya sambhasha, vadmarga and tantrayukti

6 **Comparison between methods of research in Ayurveda (Pratigya, Hetu, Udaharana, Upanaya, Nigaman) and contemporary methods in health sciences.**

7. **Different fields of Research in Ayurveda**
   a. Fundamental research on concepts of Ayurveda
   b. Panchamahabhuta and tridosha.
   c. Concepts of rasa, guna, virya, vipak, prabhav and karma
   d. Concept of prakriti-saradi bhava, ojas, srotas, agni, aam and koshtha.

8. Literary Research-
Introduction to manuscriptology: Definition and scope. Collection, conservation, cataloguing.
Data mining techniques, searching methods for new literature; search of new concepts in the available literature.Methods for searching internal and external evidences about authors, concepts and development of particular body of knowledge.

9. Drug Research (Laboratory-based)- Basic knowledge of the following:
Drug sources: plant, animal and mineral. Methods of drug identification.
Quality control and standardization aspects: Basic knowledge of Pharmacopoeial standards and parametersas set by Ayurvedic Pharmacopoeia of India.
Information on WHO guidelines for standardization of herbal preparations. Good Manufacturing Practices(GMP) and Good Laboratory Practices (GLP).

10. Safety aspects: Protocols for assessing acute, sub-acute and chronic toxicity studies. Familiarization withAYUSH guidelines (Rule 170), CDCSO and OECD guidelines.

11. Introduction to latest Trends in Drug Discovery and Drug Development
-Brief information on the traditional drug discovery process
-Brief information on the latest trends in the Drug Discovery process through employment of rational approachtechniques; anti-sense approach, use of micro and macro-arrays, cell culture based assays, use of concepts of systems biology and network physiology
-Brief introduction to the process of Drug development

12.Clinical research:
Introduction to Clinical Research Methodology identifying the priority areas of Ayurveda
Basic knowledge of the following:-
Observational and Interventional studies
Descriptive & Analytical studies
Longitudinal & Cross sectional studies
Prospective & Retrospectives studies
Cohort studies

Randomized Controlled Trials (RCT) & their types
Single-case design, case control studies, ethnographic studies, black box design, cross-over design, factorial design.
Errors and bias in research.
New concepts in clinical trial- Adaptive clinical trials/ Good clinical practices (GCP)
Phases of Clinical studies: 0,1,2,3, and 4.
Survey studies -
Methodology, types, utility and analysis of Qualitative Research methods. Concepts of in-depth interview andFocus Group Discussion.

13. Pharmacovigilance for ASU drugs. Need, scope and aims & objectives. National PharmacovigilanceProgramme for ASU drugs.

14. Introduction to bioinformatics, scope of bioinformatics, role of computers in biology. Introduction to Database- Pub med, Medlar and Scopus. Accession of databases.

15. Intellectual Property Rights- Different aspect and steps in patenting. Information on Traditional KnowledgeDigital Library (TKDL).

PART–B **40 marks**

MEDICAL STATISTICS **Teaching hours: 80**

1 **Definition of Statistics :** Concepts, relevance and general applications of Biostatistics in Ayurveda
Collection, classification, presentation, analysis and interpretation of data (Definition, utility andmethods)

2 **Scales of Measurements -** nominal, ordinal, interval and ratio scales.
Types of variables – Continuous, discrete, dependent and independent variables.
Type of series – Simple, Continuous and Discrete

3 **Measures of Central tendency** – Mean, Median and Mode.

4 **Variability:** Types and measures of variability – Range, Quartile deviation, Percentile, Mean deviationand Standard deviation

5 **Probability**: Definitions, types and laws of probability,

6 **Normal distribution**: Concept and Properties, Sampling distribution, Standard Error, Confidence Intervaland its application in interpretation of results and normal probability curve.

7 Fundamentals of testing of hypotheses:
Null and alternate hypotheses, type I and type 2 errors.
Tests of significance: Parametric and Non-Parametric tests, level of significance and power of the test, 'P'value and its interpretation, statistical significance and clinical significance

8 Univariate analysis of categorical data:

Confidence interval of incidence and prevalence, Odds ratio, relative risk and Risk difference, and theirconfidence intervals

9 **Parametric tests:**
'Z' test, Student's 't' test: paired and unpaired, 'F' test, Analysis of variance(ANOVA) test, repeated measures analysis of variance

10 **Non parametric methods:**
Chi-square test, Fisher's exact test, McNemar's test, Wilcoxon test, Mann-Whitney U test, Kruskall – Wallis with relevant post hoc tests (Dunn)

11 Correlation and regression analysis:
Concept, properties, computation and applications of correlation, Simple linear correlation, KarlPearson's correlation co-efficient, Spearman's rank correlation.
Regression- simple and multiple.

12 Sampling and Sample size computation for Ayurvedic research:
Population and sample. Advantages of sampling, Random (Probability) and non random (Non- probability) sampling. Merits of random sampling. Random sampling methods- simple random, stratified, systematic, cluster and multiphase sampling. Concept, logic and requirement of sample sizecomputation, computation of sample size for comparing two means, two proportions, estimating meanand proportions.

13 **Vital statistics and Demography**:
computation and applications - Rate, Ratio, Proportion, Mortality andfertility rates, Attack rate and hospital-related statistics

14 **Familiarization with the use of Statistical software** like SPSS/Graph Pad

PRACTICAL 100 marks

I. RESEARCH METHODOLOGY
Teaching hours 120

PRACTICAL NAME

1 Pharmaceutical Chemistry
Familiarization and demonstration of common lab instruments for carrying out analysis as per API

2 Awareness of Chromatographic Techniques
Demonstration or Video clips of following:

- Thin-layer chromatography (TLC).
- Column chromatography (CC).
- Flash chromatography (FC)
- High-performance thin-layer chromatography (HPTLC)
- High Performance (Pressure) Liquid Chromatography (HPLC)
- Gas Chromatography (GC, GLC)

4 Pharmacognosy
Familiarization and Demonstration of different techniques related to:-Drug administration techniques- oral and parenteral.

Blood collection by orbital plexuses puncturing.
Techniques of anesthesia and euthanasia.
Information about different types of laboratory animals used in experimental researchDrug identification as per API including organoleptic evaluation

5 Pharmacology and toxicology

Familiarization and demonstration of techniques related to pharmacology and toxicology

6 Biochemistry (Clinical)

Familiarization and demonstration of techniques related to basic instruments used in a clinical biochemistry laboratory – semi and fully automated clinical analyzers, electrolyte analyzer, ELISA-techniques, nephelometry.
Demonstration of blood sugar estimation, lipid profiles, kidney function test, liver function test. HbA1, cystatin and microalbumin estimation by nephelometry or other suitable techniques. Interpretation of the results obtained in the light of the data on normal values.

7 Clinical Pathology

Familiarization and demonstration of techniques related to basic and advanced instruments used in abasic clinical
pathology lab. Auto cell counter, urine analyzer, ESR, microscopic examination of urine.

8 Imaging Sciences

Familiarization and demonstration of techniques related to the imaging techniques.Video film demonstration of CT-Scan, MRI-scan and PET-scan.

9 Clinical protocol development

II. MEDICAL STATISTICS

Practical houís:20

Statistical exercise of examples from Topic number 4, 5, 8-12, 14, 15.Records to be prepared.

Distribution of marks (practical):

1. Instrumental spotting test– 20 marks
2. Clinical protocol writing exercise on a given problem– 20 marks
3. Records:Research methodology -10 Mark
4. Medical statistics -10 marks
5. Viva- Voce -40 Marks

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2. Drug Survey by Mayaram Uniyal
3. Fahn A (1981). Plant Anatomy 3rd Edition Pergamon Press, Oxford
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Pharmaceutical chemistry, quality control and drug standardization:

1. Ayurvedic Pharmacopoeia of India. Part I- volume 1 to 8 and Part II- volume 1to 3. Ministry ofHealth and Family Welfare. Controller of Publication. Govt of India. New Delhi.
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3. Galen Wood Ewing (1985). Instrumental Methods of Chemical Analysis. McGraw-Hill College ;Fifth edition
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5. HPTLC- Fingerprint atlas of Ayurvedic Single Plant Drugs mentioned in Ayurvedic Pharmacopoeia Vol- III and IV. CENTRAL COUNCIL FOR RESEARCH IN AYURVEDA AND SIDDHA. New Delhi.
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8. Laboratory Guide for- The Analysis of Ayurved and Siddha Formulations – CCRAS, New Delhi.
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11. Quality Control Methods for Medicinal Plant Material. Reprint (2002). WHO- Geneva.
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16. Sukhdev Swami Handa, Suman Preet Singh Khanuja, Gennaro Longo and Dev Dutt Rakesh (2008).Extraction Technologies for Medicinal and Aromatic Plants -INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY- Trieste,

Biochemistry and Laboratory techniques:

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12. Relevant portions of Ayurvedic Samhitas and other texts

Drug research and development:

1. RICK NG, (2009). DRUGS- from discovery to approval. John Wiley & Sons, Inc., Hoboken, NewJersey
2. Research guidelines for evaluating the safety and efficacy of herbal medicines. (1993). . WHO- (Regional Office for the Western Pacific – Manila) ISBN 92 9061 110 3 (NLM Classification: WB925).
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Biotechnology and Bio-informatics:

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2. Bergeron BP 2002 Bioinformatics Computing 1st Edition, Prentice Hall
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8. http://www.zygogen.com.
9. http://www.dsir.nic.in/reports/tifp/database/metallo.pdf.
10. www.consort-statement.org
11. www.strobe-statement.org
12. www.icmr.nic.in

Clinical Evaluation:

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Medical Statistics:

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2. Armitage P, Berry G, Matthews JNS: *Statistical Methods in Medical Research*. Fourth edition.Oxford, Blackwell Science Ltd; 2002
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15. Suhas Kumar Shetty- Medical statistics made easy

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M.D.-AYURVEDA PRELIMINARY
DRAVYAGUNA VIGYAN(Materia Medica & Pharmacology)
PAPER-II

Theory 100 Marks

PART-A 50 marks

1. Panchamahabhuta siddhanta, Samanya Vishesha siddhanta, Tridosha siddhanta. Extensive study on classifications of Dravya as described in Brihattrayi.
2. Applied aspects of Rasa, Guna, Virya, Vipaka and Prabhava
3. Applied aspects of Aushdha karma with reference to Sharngadhara and Bhavaprakasha
4. Importance of Namarupa vigyan and concept of basonyms and synonyms of Dravyas
5. Applied knowledge of Bhaishajya Prayoga (marga, kalpana, matra, anupana, sevan, kala etc.)

PART-B 50 marks

6. Basic principles of Desha pravichara, Dravya sangrahana (collection), Samrakshana (preservation)
7. Evolution of Dravyaguna vigyan with special emphasis on Nighantus
8. Prashasta bheshaj lakshana
9. Profound knowledge on applied aspects of Agrya aushadha
10. Methodology of studying controversial, pratinidhi (substitute), apamishrana (adulterant) and unidentified dravya
11. Pharmacognosy and its relevance in Dravyaguna vigyan
12. An integrated study of Charakokta Bheshaj pariksha and scientific method of drug evaluation with special reference to quality, safety and efficacy
13. Brief knowledge and importance of clinical pharmacology
14. General principles of various good cultivation practices, collection practices, storage practices and manufacturing practices
15. Pharmacovigilance and ADR issues
16. Knowledge on the Ayurvedic Pharmacopoeia of India, The Formulary of India and international pharmacopoeias

PRACTICAL 100 marks

Contents:

1. Field visits for the Identification of important classical medicinal plants (Minimum two visits to neighboring forest areas)
2. Macroscopic and microscopic identification of minimum two plants of each of prayojyanga (useful parts of plants)
3. Preliminary study of pharmacoepial standards (API) of minimum 5 plants
4. Minimum two experiments on Animals

Distribution of marks (Practical)

1. Herbarium sheets -10 Marks
2. Practical of macroscopic and microscopic identification of prayojyanga (one part of the plant)-30 Marks
3. Practical record book of pharamcopoeial standards and animal experimentations -10 Marks
4. Spotting -30 Marks
5. Viva-voce -20 Marks

REFERENCE BOOKS:

1 Abhinav Buti Darpan (Vol.1-2)- Vd. Roop Lal Vaishya
2 Aushadna Vigyna 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 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 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 Plants) - Dr. Prakash Pranjape
22 Glossry of Vegetable Drugs in Bhrittrayis -Thakur Balwant Singh & Vd. 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 Practice - Goodman & Gillman
28 Pharmacology and 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 Ayurveda - Dr. Gyanendra Panday

33 Text Book of Pharmaconogy - Trees & Valis
34 Textbook of Dravyaguna - Dr.K.Nishteswar
35 Unani Dravyaguna Vigyana - Hakim Daljeet Singh

36 Useful parts of Charaka, Sushurut, 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
41 Pharmacopia of India –all the volumes
42 Database on medicinal plants all the volums of CCRAS
43 Aurveda formulary of india – all the volums
44 All the nighantoos
45 Laghutrayi

M.D.-AYURVEDA FINAL
DRAVYAGUNA VIGYAN

(MateriaMedica& Pharmacology)

DRAVYAGUNA VIGYAN

PAPER-I

NamarupaVigyana **100 marks**

1. Importance of Namagyana of Dravya, origin of Namarupagyana of Aushadhi in Veda, etymological derivation of various names and synonyms of Aushadhi.

2. Rupagyana in relation to Aushadhi. Sthula and Sukshma description (Macroscopic and Microscopic study) of different parts of the plant.

3. Synonyms of dravyas(aushadha and Ahara) mentioned in Vedic compendia, Brihatrayee, Bhavaprakasha and Rajanighantu.

4. Basonyms, synonyms and distinguish morphological characteristic features of medicinal plants listed in Ayurvedic Pharmacopoeia of India(API).

5. Knowledge of Anuktadravya (Extrapharmacopial drugs)with regards to namarupa.

6. Sandigdhadravya(Controversial drugs) vinischaya.

7. Knowledge of biodiversity, endangered medicinal species.

8. Knowledge of TKDL, Introduction to relevant portions of Drugs and cosmetic act, Magic remedies Act, Intellectual Property Right (IPR) and Regulations pertaining to Import and Export of Ayurvedic drugs.

09. Knowledge of tissue culture techniques

10. Knowledge of Genetically Modified Plants

PAPER –II

Guna Karma Vigyan **100 marks**

1. Fundamental principles of drug action in Ayurveda and conventional medicine.

2. Detailed study of rasa-guna- virya- vipaka-prabhava and karma with their applied

aspects and commentators (Chakrapanidatta, Dalhana, Arunadatta, Hemadri and Indu) views on them.

3. Comprehensive study of karma as defined in Brihatrayee&Laghutrayee

4. Detailed study of Guna and Karma of dravyas listed in API and BhavaprakashaNighantu along with current research review.

5. Detailed study of aharadravya/ aharavargaascribed inBrihatrayee and various nighantus along with Kritannavarga.

6. Pharmacologycal principles and knowledge on drugs acting on various systems.

7. Basic knowledge on experimental pharmacology for the evaluation of - analgesic, anti pyretic, anti inflammatory, anti diabetic, anti hypertensive, hypo lipidemic, anti ulcer, cardio protective, hepatoprotective, diuretics, adaptogens, CNS activites.

8. Knowledge on Heavy metal analysis, pesticidal residue and aflatoxins

9. Knowledge on evaluation of anti microbial and antimycotic activities.

PAPER – III

Prayogavigyana **Marks 100**

1. BhaishjyaPrayogSiddhant [Principles of drug administration] - BhaishajyaMarga (routes of drug administration), VividhaKalpana (Dosage forms), Principles of Yoga Vijnan(compounding), Matra (Dosage), Anupana (Vehicle), Aushadhagrahankal (Time of drug administration), Sevankalavadhi (duration of drug administration), Pathyapathya (Dos' /Donts' /Contraindications), complete Prescription writing (SamagraVyavasthapatraka).

2. Samyoga- ViruddhSidhanta and its importance

3. Amayikaprayoga (therapeutic uses) of important plants ascribed in as well as Brihattrayee, Chakradutta, Yoga ratnakara and Bhavaprakasha.

4. Knowledge of Pharmaco-vigilance in Ayurveda and conventional system of medicine.

5. Knowledge of clinical pharmacology and clinical drug research as per GCP guide lines.

6. lKnowledge of Pharmacogenomics

PAPER- IV **100 marks**

1. Etymology of nighantu, their relevance, utility and salient features.

2. Chronological history of the following Nighantus with their authors name, period and content- Paryayaratnamala, Dhanvantarinighantu, Hridayadipikanighantu, Ashtanganighantu, Rajanighantu, Siddhamantranighantu, Bhavaprakashanighantu, Madanpalanighantu, Rajavallabhanighantu, MadhavaDravyaguna, Kaiyadevanighantu, Shodhalanighantu, Saligramnighantu, Nighanturatnakara, Nighantuadharsha and Priyanighantu

3. Detailed study Aushadhakalpana mentioned in Sharangadharasamhita and Ayurvedic Formulary of India (AFI).

4. General awareness on poshakaahara(Nutraceuticals),Varnya(cosmoceuticals), food addictives, Excipients etc.

5. Knowledge of plant extracts, colors, flavors and preservatives.

6. Review of important modern works on classical medicinal plants published by Govt of India, department of AYUSH and ICMR.

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

Practical:-

Study tours:

Field identification of medicinal plants through at least three local Dravyaguna study tours within the state and one study tour out of state. Preparation of minimum 50 herbarium sheets, along with raw drug either from field, of plants be collected during study tours.

1. Evaluation of Crude drugs:

Macro and microscopic methods of examining five drugs of each of different useful parts of plants, including their powders.

2. Phytochemical evaluation of raw material:

Quantitative standards 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.

3. Yoga vijnana :

Preparation of two yoga of each kalpana of Ayurvedic Formulary 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)- 05 models for possible rasadigunas.

5. Clinical

- Regular clinical training in the hospital for submission of Single AushadhiPrayoga (Single drug trial/ Clinico-pharmacological studies.)
- Survey for Amayikaprayoga of aushadhi(Pharmaco epidemiology) for studying their role in clinical practice in contemporary period -observational study-minimum.

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

inDravyaguna and submitted 6 months before the final examination. The approval of Dissertation shall be essential before appearing the final examinations.

7. Method of practical training – 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 skills in animal experimentation
- Regular clinical training in the Teaching hospital for studying EkalaAushadhiPrayoga& Adverse drug reactions(ADR).

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

9. Post Graduate Scholar is expected to publish / get accepted at least one paper in indexed/ peer reviewed journal under the supervision of guide.

Pattern of Practical Examination- **Total =200 marks**

1. Herbarium - 10 Marks
2. Pharmacognosy practical record - 10 Marks
3. Pharmacology practical record - 10 Marks
4. Clinical records record -10 Marks
5. Practical examination(Identification of green and raw drugs, microscopic examination, Ekalaaushadhapariksha - 60 Marks
6. Thesis Presentation - 20Marks
7. Viva voce -80 Marks

Reference books -

REFERENCE BOOKS:

1 Abhinav Buti Darpan (Vol.1-2)- Vd. Roop Lal Vaishya
2 Aushadna Vigyna 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 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 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 Plants) - Dr. Prakash Pranjape
22 Glossry of Vegetable Drugs in Bhrittrayis -Thakur Balwant Singh & Vd. 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 Practice - Goodman & Gillman
28 Pharmacology and 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 Ayurveda - Dr. Gyanendra Panday
33 Text Book of Pharmaconogy - Trees & Valis
34 Textbook of Dravyaguna - Dr.K.Nishteswar
35 Unani Dravyaguna Vigyana - Hakim Daljeet Singh

36 Useful parts of Charaka, Sushurut, 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
41 Pharmacopia of India –all the volumes
42 Database on medicinal plants all the volums of CCRAS
43 Aurveda formulary of india – all the volums
44 All the nighantoos
45 Laghutrayi