

M.D./M.S.-AYURVEDA PRELIMINARY
PAPER-I
RESEARCH METHODOLOGY AND MEDICAL STATISTICS

Theory-100 Marks
Teaching Hours:200 Hours

PART-A
RESEARCH METHODOLOGY

60 Marks
Teaching Hours: 120

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 and limitations
 - c. Defining research problem and formulation of hypothesis
 - d. Defining general and specific objectives
 - e. Research design: observational and interventional, descriptive and analytical, preclinical and clinical, 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 filling up 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.

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
Fundamental research on concepts of Ayurveda
 - a. Panchamahabhuta and tridosha.
 - b. Concepts of rasa, guna, virya, vipak, prabhav and karma
 - c. 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 parameters as 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 with AYUSH 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 approach techniques; anti-sense approach, use of micro and macro-arrays, cell culture based assays, use of concepts of systems biology and networkphysiology
-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 and Focus Group Discussion.
13. Pharmacovigilance for ASU drugs. Need, scope and aims & objectives.
National Pharmacovigilance Programme for ASU drugs.
14. Introduction to bioinformatics, scope of bioinformatics, role of computers in biology.
Introduction to Data base- Pub med, Medlar and Scopus. Accession of databases.
15. Intellectual Property Rights- Different aspect and steps in patenting. Information on Traditional Knowledge Digital Library (TKDL).

PART-B
MEDICAL STATISTICS

40 marks
Teaching hours: 80

1. Definition of Statistics : Concepts, relevance and general applications of Biostatistics in Ayurveda
2. Collection, classification, presentation, analysis and interpretation of data (Definition, utility and methods)
3. 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
4. Measures of Central tendency – Mean, Median and Mode.
5. Variability: Types and measures of variability – Range, Quartile deviation, Percentile, Mean deviation and Standard deviation
6. Probability: Definitions, types and laws of probability,
7. Normal distribution: Concept and Properties, Sampling distribution, Standard Error, Confidence Interval and its application in interpretation of results and normal probability curve.
8. 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
9. Univariate analysis of categorical data:
Confidence interval of incidence and prevalence, Odds ratio, relative risk and Risk difference, and their confidence intervals
10. Parametric tests: 'Z' test, Student's 't' test: paired and unpaired, 'F' test, Analysis of variance (ANOVA) test, repeated measures analysis of variance
11. Non parametric methods: Chi-square test, Fisher's exact test, McNamara's test, Wilcoxon test, Mann-Whitney U test, Kruskal – Wallis with relevant post hoc tests (Dunn)
12. Correlation and regression analysis:
Concept, properties, computation and applications of correlation, Simple linear correlation, Karl Pearson's correlation co-efficient, Spearman's rank correlation.
Regression- simple and multiple
13. 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 size computation, computation of sample size for comparing two means, two proportions, estimating mean and proportions.
14. Vital statistics and Demography: computation and applications - Rate, Ratio, Proportion, Mortality and fertility rates, Attack rate and hospital-related statistics
15. Familiarization with the use of Statistical software like SPSS/Graph Pad

PRACTICAL

100 Marks
Teaching Hours 120

I. RESEARCH METHODOLOGY

	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: <ul style="list-style-type: none">• 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 research Drug 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 micro albumin 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 a basic 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 hours: 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: | |
| 4. Research methodology | -10 Mark |
| 5. Medical statistics | -10 marks |
| 6. Viva- Voce | -40 Marks |

REFERENCE BOOKS:-

Pharmacognosy:

1. Aushotosh Kar "Pharmacognosy & Pharmacobiotechnology" New Age International Publisher. Latest Edition. New Delhi.
2. Drug Survey by Mayaram Uniyal
3. Fahn A (1981). Plant Anatomy 3rd Edition Pergamon Press, Oxford
4. Kokate, CK., Purohit, AP, Gokhale, SB (2010). Pharmacognosy. Nirali Prakashan. Pune.
5. Kokate, CK., Khandelwal and Gokhale, SB (1996). Practical Pharmacognosy. Nirali Prakashan. Pune.
6. Trease G E and Evans W C, Pharinacognosy, Bailliere Tindall, Eastbourne, U K.
7. Tyler V C., Brady, L R., and Robers J E., Pharmacognosy, Lea and Febiger, Philadelphia.
8. Tyler VE Jr and Schwarting AE., Experimental Pharmacognosy, Burgess Pub. Co, Minneaplis, Minnesota.
9. Wallis- TE (2011)- reprint. Practical Pharmacgonosy (Fourth Edition) Pharma Med Press, Hyderabad.
10. Wallis T E, Analytical Microscopy, J & A Churchill limited, London.
11. Wallis T E., Text Book of Pharmacognosy, J & A Churchill Limited, London.
12. WHO guidelines on good agricultural and collection practices- (GACP) for medicinal plants (2003).World Health Organization- Geneva.
13. WHO monographs on selected medicinal plants (1999)—Vol. 1. 1.Plants, Medicinal 2.Herbs 3.Traditional medicine. ISBN 92 4 154517 8. WHO Geneva.

Pharmaceutical chemistry, quality control and drug standardization:

1. Ayurvedic Pharmacopoeia of India. Part I- volume 1 to 8 and Part II- volume 1 to 3. Ministry of Health and Family Welfare. Controller of Publication. Govt of India. New Delhi.
2. Brain, KR and Turner, TD. (1975). The Practical Evaluation Phytopharmaceuticals. Wright Scienctecnica, Bristol.
3. Galen Wood Ewing (1985). Instrumental Methods of Chemical Analysis. McGraw-Hill College ; Fifth edition
4. Harborne, JB (1973). Phytochemistry Methods. Chapman and Hall, International Edition, London.

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.
6. Kapoor, RC (2010). Some observations on the metal based preparations in Indian System of Medicine. Indian Journal of Traditional Knowledge. 9(3): 562-575
7. Khopkar, S. M. Analytical Chemistry, New Age International Publishers , 3 rd edition
8. Laboratory Guide for- The Analysis of Ayurved and Siddha Formulations – CCRAS, New Delhi.
9. Mahadik KR, Bothara K G. Principles of Chromatography by, 1st edition, Nirali Prakashan.
10. Qadry JS and Qadry S Z., Text book of Inorganic Pharmaceutical and Medicinal Chemistry, B. S. Shah Prakashan, Ahmedabad.
11. Quality Control Methods for Medicinal Plant Material. Reprint (2002). WHO- Geneva.
12. Rangari V.D., Pharmacognosy & Phytochemistry, Vol I, II, Career Publication,
13. Sharma BK. Instrumental Methods of Chemical Analysis by, Goel Publishing House.
14. Srivastav VK and Shrivastav KK. Introduction to Chromatography (Theory and Practice)
15. Stahl E., Thin Layer Chromatography - A Laboratory Handbook, Springer Verlag, Berlin.
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:

1. Asokan P. (2003) Analytical Biochemistry, China publications,
2. Campbell, P.N and A.D .Smith, Biochemistry Illustrated, 4th ed, Churchill Livingstone.
3. David Frifelder. W. H. Freeman. (1982). Physical Biochemistry by; 2 edition
4. David Sultan (2003).Text book of Radiology and Imaging, Vol-1, 7th Edition.
5. Deb, A.C., Fundamentals of Biochemistry, Books and Allied (P) Ltd, 2002.
6. Harold Varley. Practical Clinical Bio-chemistry
7. Kanai L.Mukherjee. Clinical Pathology;Medical Laboratory Technology Vol. I.Tata McGrawHill 1996, New Delhi.
8. Gradwohl, Clinical Laboratory-methods and diagnosis, Vol-I
9. Clinical Biochemistry -Sabitri Sanyal, Clinical Pathology, B.I.Churchill Livingstone (P) Ltd, New Delhi.2000.
10. Satyanarayanan,U. Essentials of Biochemistry, Books and allied(P) Ltd.2002
11. Zubay, G.L. Biochemistry, W.M.C. Brown Publishers, New York 1998.
12. Text book of Radiology and Imaging, Vol-1, David Sultan, 7th Edition. 2003.

Research methodology:

1. Alley, Michael. The craft of scientific writing. Englewood Cliffs. N.N. Prentice 1987.
2. Ayurvediya Anusandhan Paddhati – P.V. Sharma
3. Altick and Fenstermaker. (2007).*The Art of Literary Research*. 4th ed. W. W. Norton. Castle, Gregory. *Blackwell Guide to Literary Theory*. Blackwells,
4. Bowling, A. (2002). Research Methods in Health (2nd ed). Buckingham: Open University Press.
5. Day R.A. How to write a scientific paper. Cambridge University Press.

6. Cooray P.G. Guide to scientific and technical writing.
7. Deepika Chawla and Neena Sondhi. (2011). Research Methods- Concepts and cases. New Delhi: Vikas Publishing House.
8. Greenhalgh, T. (2006) How to Read a Paper: The Basics of Evidence-Based Medicine. (3rd ed) Blackwell
9. Kothari- CR (2004). Research Methodology- Methods and Techniques (Second Revised Edition). New Age International Publishers- New Delhi.
10. Kumar, R. 2005. *Research Methodology: a Step-by-Step Guide for Beginners, 2nd ed.* Thousand Oaks, CA, London: Sage Publications.
11. Petter Laake, Haakon Breien Benestad and Bjørn Reino Olsen. (2007). Research Methodology in the Medical and Biological sciences. Academic Press is an imprint of Elsevier, 84 Theobald's Road, London WC1X 8RR, UK. ISBN: 978-0-12-373874-5
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, New Jersey
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: WB 925).
3. Jagdeesh, Sreekant Murthy, Gupta, YK and Amitabh Prakash Eds. Biomedical Research (From Ideation to Publication) (2010). Wolters Kluwer/ Lippincott Williams and Wilkins.
4. WHO Guidelines on Safety Monitoring of herbal medicines in pharmacovigilance systems. (2004). WHO- Geneva. ISBN 92 4 1592214.
5. Natural products isolation. (2006) 2nd ed. / edited by Satyajit D. Sarker, Zahid Latif, Alexander I. Gray. (Methods in biotechnology; 20). Includes bibliographical references and index. Humana Press Inc. ISBN 1-58829-447-1 (acid-free paper) – ISBN 1-59259-955-9 (eISBN)
6. Gazette Extraordinary Part- II-Section 3 - Sub section (i) December 2008. Govt of India. AYUSH Guidelines on safety studies- Rule 170 of Drugs and Cosmetics Act.
7. OECD (2000) Guidance Document on Acute Oral Toxicity. Environmental Health and Safety Monograph Series on Testing and Assessment No 24.
8. OECD Guideline for the Testing of Chemicals – Repeated Dose 90-day Oral Toxicity Study in Rodents, 408, 1998.
<http://browse.oecdbookshop.org/oecd/pdfs/free/9740801e.pdf>(latest version)
9. OECD Series on Principles of Good Laboratory Practice (GLP) and Compliance Monitoring, 1998.
http://www.oecd.org/document/63/0,2340,en_2649_34381_2346175_1_1_1,00.html
10. ICH Harmonised Tripartite Guideline (2000). Maintenance of the ICH Guideline on Non-clinical Safety Studies for the conduct of Human Clinical Trials for Pharmaceuticals M3 (R1).
11. Ghosh M.N.: Fundamentals of Experimental Pharmacology, *Scientific Book Agency, Bombay.*
12. Jaju B.P.: Pharmacological Practical Exercise Book, *Jaypee Brothers, New Delhi.*
- 13- Kulkarni S.K.: Hand Book of Experimental Pharmacology, *Vallabh Prakashan, New Delhi*
- 14- Ravindran R.: X-Pharm (Software), Indian Journal of Pharmacology, *JIPMER, Pondicherry.*

Biotechnology and Bio-informatics:

1. Angela M. Meireles A (2009). Extracting Bioactive compounds for food products. Theory and applications. CRC- Press Taylor and Francis Group.
2. Bergeron BP 2002 Bioinformatics Computing 1st Edition, Prentice Hall
3. Chikhale, N.J. and Virendra Gomase, Bioinformatics- Theory and Practice, Publisher: Himalaya Publication House, India; 1 edition (July, 2007) ISBN-13: 978-81-8318-831-9
4. Lesk, A.M. Introduction to Bioinformatics Oxford 2002.
5. Satyanarayana, U.: Biotechnology, Books and Allied (P) Ltd, Kolkata, 2005
6. Setubal J. C and J. Meidanis, Introduction to Computational Molecular Biology, PWS Publishing Company, 1997.
7. <http://www.iitb.ac.in/~crnts>.
8. <http://www.zygen.com>.
9. <http://www.dsr.nic.in/reports/tifp/database/metallo.pdf>.
10. www.consort-statement.org
11. www.strobe-statement.org
12. www.icmr.nic.in

Clinical Evaluation:

1. CDSCO, Good Clinical Practices For Clinical Research in India, Schedule Y (Amended Version – 2005), <http://cdsco.nic.in/html/GCP1.html>
2. Ethical Guidelines for Biomedical Research on Human subjects. (2000). Indian Council of Medical Research- New Delhi.
3. Gallo P., Chuang-Stein C., Dragalin V., Gaydos B., Krams M., Pinheiro J. Adaptive Designs in Clinical Drug Development—An Executive Summary of the PhRMA Working Group. *Journal of Biopharmaceutical Statistics*. 16: 275–283; 2006
4. Good Clinical Practices- (2001). Guidelines for Clinical Trial on Pharmaceutical Products in India. Central Drugs Standard Control Organization. Directorate General of Health Services. New Delhi. (<http://WWW.cdsco.nic.in.ich.org>)
5. Gupta, SK Ed. Basic Principles of Clinical Research and Methodology (2007). Jaypee Brothers- new Delhi
6. ICH Harmonised Tripartite Guidelines for Good Clinical Practices.(1997)- Quintiles- Published by Brookwood Medical Publications. Richmond, Surrey. United Kingdom.
7. NCI. *Clinical Trials Education Series*. <http://www.cancer.gov/clinicaltrials/learning/clinical-trials-education-series>, 2001.
8. Petter Laake, Haakon Breien Benestad and Bjørn Reino Olsen. (2007). Research Methodology in the Medical and Biological sciences. Academic Press is an imprint of Elsevier, 84 Theobald's Road, London WC1X 8RR, UK. ISBN: 978-0-12-373874-5
9. William C. Scheffer Introduction to Clinical Researchs

Medical Statistics:

1. Armitage, P. and Berry, G. (1994) Statistical Methods in Medical Research (3rd ed). Blackwell Science.
2. Armitage P, Berry G, Matthews JNS: *Statistical Methods in Medical Research*. Fourth edition. Oxford, Blackwell Science Ltd; 2002
3. Bland, M. (2000) An Introduction to Medical Statistics (3rd ed). Oxford: Oxford University Press.
4. Bradford Hill – Basic Medical Statistics

5. Cambell, M.J. and Machin, D. (1993) Medical Statistics: A Common Sense Approach (2nd ed). Chester: Wiley.
6. Dwivedi S. N., Sundaram K. R and V. Sreenivas (2009). Medical Statistics - Principles & Methods-BI Publications Pvt. Ltd., New Delhi -1.
7. Gupta S.P. - Fundamentals of statistics, Sultan Chand. Delhi.
8. Indrayan. (2008). Basic Methods of Medical Research. AITBS Publishers- India
9. Mahajan B K, Methods in Bio statistics for medical students, 5th Ed. New Delhi, Jaypee Brothers Medical Publishers
10. Mehdi, B and Prakash A. (2010). Biostatistics in Pharmacology. Practical Manual in experimental and clinical pharmacology. 1st Edition. New-Delhi: Jaypee brothers Medical Publishers
11. Rao, NSN and Murthy, NS. (2008) 2nd Edition. Applied statistics in health sciences. Jaypee Brothers Medical Publishers (P) Ltd. Bengaluru, New Delhi.
12. Rick J Turner and Todd A Durham (2008). Introduction to Statistics in Pharmaceutical Clinical trails. Published by the Pharmaceutical Press- An imprint of RPS Publishing,1 Lambeth High Street, London SE1 7JN, UK
13. Symalan, K. (2006). Statistics in Medicine (First Edition) Trivandrum: Global Education Bureau.
14. Sundar Rao, Jesudian Richard - An Introduction to Biostatistics.
15. Suhas Kumar Shetty- Medical statistics made easy

M.D.-AYURVEDA PRELIMINARY

**1. AYURVED SAMHITA & SIDDHANTA
(Ayurvedic Compendia & Basic Principles)**

PAPER-II

**THEORY- 100 marks
Practical- Viva-Voce-100
50 marks**

PART-A

1. Learning and Teaching methodology available in Samhita- Tantrayukti, Tantraguna, Tantradosha, Tachchilya, Vadamarga, Kalpana, Arthashraya, Trividha Gyanopaya, teaching of Pada, Paada, Shloka, Vakya, Vakyartha, meaning and scope of different Sthana and Chatushka of Brihatrayee.
2. Manuscriptology - Collection, conservation, cataloguing, Critical editing through collation, receion (A critical revision of a text incorporating the most plausible elements found in varying sources), emendation (changes for improvement) and textual criticism (critical analysis) of manuscripts. Publication of edited manuscripts.
3. Concept of Bija chatustaya (Purush, Vyadhi, Kriyakaal, Aushadha according to Sushrut Samhita).
4. Introduction and Application of Nyaya (Maxims) - Like Shilaputrak Nyaya, Kapinjaladhikaran Nyaya, Ghunakshara Nyaya, Gobalivarda Nyaya, Naprishtah Guravo Vadanti Nyaya, Shringagrahika Nyaya, Chhatrino Gacchhanti Nyaya, Shatapatrabhedana Nyaya, Suchikatah Nyaya.
5. Importance and utility of Samhita in present era.
6. Importance of ethics and principles of ideal living as mentioned in Samhita in the present era in relation to life style disorders.
7. Interpretation and co-relation of basic principles with contemporary sciences.

PART-B

50 marks

1. Definition of Siddhanta, types and applied examples in Ayurveda.
2. Ayu and its components as described in Samhita.
3. Principles of Karana-Karyavada, its utility in advancement of research in Ayurveda.
4. Theory of Evolution of Universe (Srishti Utpatti), its process according to Ayurveda and Darshana.
5. Importance and utility of Triskandha (Hetu, Linga, Aushadh) and their need in teaching, research and clinical practice.
6. Applied aspects of various fundamental principles: Tridosha, Triguna, Purusha and Atmanirupana, Shatpadartha, Ahara-Vihara. Scope and importance of Pariksha (Pramana).
7. Importance of knowledge of Sharir Prakriti and Manas Prakriti.
8. Comparative study of Principles of Ayurveda and Shad Darshanas.

1. REFERENCE BOOKS:-

1	Charak Samhita	Chakrapani commentary
2	Sushrut Samhita	Dalhana Commentary
3	Ashtanga Samgraha	Indu commentary
4	Ashtanga Hridaya	Arundutta and Hemadri commentary
5	Vaisheshika Darshan	Prashastapada Bhasya
6	Nyaya Darshan	Vatsyayan Bhasya Patanjala
7	Yoga Darshan	Vyas Bhasya
8	Vedantsara	
9	Sarvadarshan Samgraha	
10	Bhartiya Darshan	Baldev Upadhayaya
11	Ayurved Darshanam	Acharya Rajkumar Jain

M.D.-AYURVEDA PRELIMINARY

2. RACHANA SHARIR
(Anatomy)

PAPER-II

Theory 100 marks

PART-A

50 marks

1. Basic principles of Sharira, Purushavichaya, Rashi Purusha, Karma Purusha (Shad Dhatuj Purusha), Chaturvimshati Purusha, Ek Dhatu Purusha. Relevant principles described in the Sharirasthan of Sushrut Samhita, Charak Samhita, Ashtang Sangrah and Ashtang Hridaya.
2. Basic principles of Garbha Sharira in Ayurveda: Definitions of Garbha, Shukra Shonita Siddhanta, Dauhrida, Matrijadi Garbhotpattikar bhava.
3. Types of tissues, histological study of liver, spleen, uterus, kidney, endocrine glands, mammary gland, skin, tongue, lungs, bronchi, bones, muscles, cartilages and nervous tissue.

PART-B

50 marks

1. Paribhasha Sharira (Anatomical terminology)
2. Pramana Sharira – Anguli and Anjali Pramana, Sama pramana Sharira, Ayama – Vistara and their prognostic values.
3. Fundamental aspects of Asthi, Sandhi, Peshi Sharir.
4. Fundamental aspects of Sira, Dhamani, Srotas – Definitions, Siravedha, Avedhya Sira. Fundamental aspect of Srotomoola Sthana.
5. Fundamental aspects of Koshtha and Koshtang: Hridaya, Yakrit, Vrikka, phupphusa, Aantra, Pleeha, Adhivrikkagranthi, Basti, Paurushagranthi, Amashaya, Agnyashaya and Vrishana.
6. Fundamental aspects of Uttamangiya Sharir – Introduction to Nervous system - development, divisions, neuron–structure, types, functional anatomy.
7. Mrita shodhan (as per Sushruta) and Mrita Samrakshana (preservation method of human cadaver).

PRACTICAL

100 marks

Contents:

1. Practical study of bones
2. Practical study of organs
3. Practical study of surface and radiological anatomy.
4. Shava Vichhedana – detailed dissection of the whole body.
5. Practical study of location of Marma
6. Demonstration of histology slides (10 slides)

Distribution of marks (Practical)

- | | |
|---|------------|
| 1. Spotting | - 20 Marks |
| 2. Surface Anatomy | - 20 Marks |
| 3. Dissection | - 30 Marks |
| 4. Imaging Anatomy – Basic Principles and Application | - 10 Marks |
| 5. Viva-Voce | - 20 Marks |

REFERENCE BOOKS:

- | | |
|---|---------------------------|
| 1. Relevant matters of Brihatrayee and Laghutrayee | |
| 2. PratyakshaShariram | - GananathSen |
| 3. AbhinavaShariram | - Damodar Sharma Gaur |
| 4. Parishadyam Sabdartha Shariram | - Damodara Sharma Gaur |
| 5. Brihat Shariram | - P S Varier |
| 6. Shiva Samhita | |
| 7. Gray's Anatomy | - Latest Edition |
| 8. Human Anatomy | - B D Chaurasia |
| 9. Cunnigham's Companion to Manual of Practical Anatomy.Vol I, II & III | |
| 10. Developing Human | - Keith L Moore & Persaud |
| 11. Clinically oriented Anatomy | - Keith L Moore |
| 12. Clinically oriented Neuro Anatomy | - Richard Snell |
| 13. Surface and Radiological Anatomy | - Halim |
| 14. Grant's Methods of Anatomy | - Grant |
| 15. Grant's dissector | - Grant |
| 16. Human Embryology | - I. B. Singh |
| 17. Ayurvediya Human Anatomy | - G. M. Kanthi |

M.D.-AYURVEDA PRELIMINARY

**3.KRIYA SHARIR
(Physiology)**

**PAPER II
PART A**

**Theory 100 Marks
50 Marks**

1. Theory of Loka-Purusha Samya
2. Theory of Panchamahabhuta
3. Physiological aspects of Samanya – Vishesh siddhanta
4. Concepts of Tridosha and Triguna
5. Concept of Dhatu
6. Concept of Mala
7. Description of Ojas
8. Process of Ahara Parinama including Aharaparinamakara Bhava and Asta Ahara Vidhi Visayatana
9. Physiological importance of Agni, its classification and functions
10. Dhatuposana theories
11. Concepts of Atma, Manas and Indriya.
12. Concepts of Prakriti and Ashtavidha Sara.
13. Concept of Srotas

PART B

50 Marks

Description of essential and relevant understandings related to contemporary physiology, both general physiology and systemic physiology.

1. Essentials of cell physiology – organization of cell.
2. Membrane physiology- transport across cell membrane, action potentials and resting membrane potentials.
3. Homeostasis- negative and positive feedback mechanisms.
4. Genetic code, its expression and regulation of gene expression.
5. Essentials of cardiovascular physiology- cardiac cycle, regulation of heart rate and blood pressure.
6. Essentials of respiratory physiology- regulation of respiration-chemical and neural, gaseous exchange, transportation of gases.
7. Gastrointestinal physiology- various digestive juices and their actions, gastrointestinal hormones, enteric nervous system.
8. Nervous system physiology- ANS, somatic nervous system, reflexes, general and special sensations, higher mental functions, functions of brain, brainstem and spinal cord.
9. Blood: Blood cells-RBCs, WBCs, platelets, plasma proteins and immunity.
10. Muscle physiology: properties and mechanisms of contraction of skeletal, cardiac and smooth muscles.
11. Physiology of excretion- mechanism of urine formation, micturition.
12. Endocrine physiology: Classification of hormones, hormones secreted by pituitary, thyroid, parathyroid, adrenal glands, pineal, pancreas and their functions.
13. Study of male and female reproductive system: functions of reproductive hormones.

PRACTICAL

100 Marks

Contents:

Ayurvedic practicals
Assessment of Prakriti
Assessment of Sara
Pramana Pariksha

Hematology

Hemoglobin estimation
Total RBC count
Total WBC count
Differential leukocyte count
Packed cell volume (PCV)
ESR
Bleeding time
Clotting time
Blood grouping and Rh typing

Urine examination -

Physical examination- Specific gravity and reaction of urine
Chemical examination
Albumin test
Sugar test
Ketone bodies
Bile salts and pigments

Distribution of marks (Practical)

1. Laboratory Practical	- 20
2. Human Experiment	- 15
3. Spotting	- 15
4. Prakriti Saradi pariksha	- 20
5. Practical Record	- 10
6. Viva-voce	- 20

REFERENCE BOOKS:

1. Ayurvediya Kriyasharir	- Ranjit Rai Desai
2. Kayachikitsa Parichaya	- C. Dwarkanath
3. Prakrit Agni Vigyan	- C. Dwarkanath
4. Sharir Kriya Vigyan	- Shiv Charan Dhyani
5. Abhinava Sharir Kriya Vigyana	- Acharya Priyavrata Sharma
6. Dosha Dhatu Mala Vigyana	- Shankar Gangadhar Vaidya
7. Prakrita Dosha Vigyana	- Acharya Niranjana Dev
8. Tridosha Vigyana	- Shri Upendranath Das
9. Sharira Tatva Darshana	- Hirlekar Shastri
10. Prakrita Agni Vigyana	- Niranjana Dev
11. Deha Dhatvagni Vigyana	- Vd. Pt. Haridatt Shastri
12. Sharir Kriya Vigyana (Part 1-2)	- Acharya Purnchandra Jain
13. Sharir Kriya Vigyana	- Shri Moreswar Dutta Vd.
14. Sharira Kriya Vijnana (Part 1-2)	- Nandini Dhargalkar
15. Dosha Dhatu Mala Vigyana	- Basant Kumar Shrimal

- | | |
|---|---|
| 16. Abhinava Sharir Kriya Vigyana | - Dr. Shiv Kumar Gaur |
| 17. Pragyogik Kriya Sharir | - Acharya P.C. Jain |
| 18. Kaya Chikitsa Parichaya | - Dr. C. Dwarkanath |
| 19. Concept of Agni | - Vd. Bhagwan Das |
| 20. Purush Vichaya | - Acharya V.J. Thakar |
| 21. Kriya Sharir | - Prof. Yogesh Chandra Mishra |
| 22. Sharir Kriya Vigyana | - Prof. Jayaram Yadav & Dr. Sunil Verma |
| 23. Basic Principles of Kriya-Sharir (A treatise on Ayurvedic Physiology) by -Dr. Srikant Kumar Panda | |
| 24. Sharir Kriya – Part I & II | -Dr. Ranade, Dr. Deshpande & Dr. Chobhe |
| 25. Human Physiology in Ayurveda | -Dr Kishor Patwardhan |
| 26. Sharirkriya Vignyan Practical Hand Book | -Dr.Ranade, Dr.Chobhe, Dr. Deshpande |
| 27. Sharir Kriya Part 1&2 | -Dr.R.R.Deshapande, Dr.Wavhal |
| 28. Textbook of Physiology | -Gyton & Hall |
| 29. Review of medical physiology | -William Ganong |
| 30. Essentials Of Medical Physiology | -Sembulingam, K. |
| 31. Concise Medical Physiology | -Chaudhari, Sujit. K. |
| 32. Fundamental of Anatomy & Physiology | -Martini |
| 33. Principals of Anatomy & Physiology | -Tortora & Grabowski |
| 34. Human Physiology | -Richards, Pocock |
| 35. Samson Wrights Applied Physiology, Keele, Neil, joels | |
| 36. Brainstem Control of Wakefulness And Sleep | - Steriade, Mirce |
| 37. An Introduction to Human Physiology | - Green, J.h. |
| 38. Ancient Indian Medicine | - Kutumbiah P. |
| 39. Biographical History of Indian Medicine | - Srikanthamurthy KR |
| 40. Ayurveda Kriya Sharira | - Yogesh Chandra Mishra |
| 41. Textbook of Medical Physiology | - Indu Khurana |
| 42. Tridosha Theory | - Subrahmanya Shastri |
| 43. Statistics in Medicine | - K. Syamalan |

M.D.-AYURVEDA PRELIMINARY

4. 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 Brihatrayi.
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

1. Basic principles of Desha pravichara, Dravya sangrahana (collection), Samrakshana (preservation)
2. Evolution of Dravyaguna vigyan with special emphasis on Nighantus
3. Prashasta bheshaj lakshana
4. Profound knowledge on applied aspects of Agrya aushadha
5. Methodology of studying controversial, pratinidhi (substitute), apamishrana (adulterant) and unidentified dravya
6. Pharmacognosy and its relevance in Dravyaguna vigyan
7. An integrated study of Charakokta Bheshaj pariksha and scientific method of drug evaluation with special reference to quality, safety and efficacy
8. Brief knowledge and importance of clinical pharmacology
9. General principles of various good cultivation practices, collection practices, storage practices and manufacturing practices
10. Pharmacovigilance and ADR issues
11. 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 PRELIMINARY
5. RASA SHASTRA AND BHAISHAJYA KALPANA
(Iatrochemistry & Pharmaceuticals Science)

PAPER-II
PART-A

Theory 100 marks
50 marks

1. Fundamental principles of Rasa Shastra and Bhaishajya Kalpana, introduction to Rasachikitsa, Ashuddha and Apakwa Bhasma- sevan Dosha and its management, introduction to Aushadha Sevan Kaal and Prayoga Marga (routes of administration).
2. Introduction to basic principles of Aushadha Yoga (formulations).
3. Classification of Rasa Dravya - concept and relevance.
4. Introduction to principles of Aushadha Nirmana, concept of Shodhan, Marana, Jarana, Murcchhana, Sattvapatan and Amritikarana.
5. Concept of Kashaya, Panchavidha Kashaya and other Kalpana.
6. Concept of Rasashala, Rasa Mandapa with introduction to pharmacy in accordance with the Good Manufacturing Practices (GMP).
7. Critical study of Rasa Ratnasamuchchaya, Rasendra Chintamani, Rasa Tarangini, Sharngadhara Samhita, Chakradutta and Bharat Bhaishajya Ratnakara with special reference to Aushadha-Nirmana.

PART-B

50 marks

1. Introduction to methods of analytical, toxicity, experimental and clinical validation of classical and proprietary Ayurvedic formulations.
2. Introduction to new dosage forms.
3. Introduction to advance instruments of analysis like XRD, XRF, SEM-E-Dax, ICP analysis, Chromatography: TLC, gas chromatography, HPTLC, concept of Nanotechnology and its relevance to Aushadha-Nirman.
4. Concept of Pharmacopoeia and Formulary with introduction of 'The Ayurvedic Pharmacopoeia of India' (API) and 'The Ayurvedic Formulary of India' (AFI).
5. Introduction to databases of medicinal plants published by CCRAS, ICMR and others.

PRACTICAL

100 marks

Contents:

- | | |
|---|-----------------|
| 1. Shodhan, Marana, Amritikarana of Rasa Dravya | (10 practicals) |
| 2. Preparation of different dosage forms | (10 forms) |
| 3. Pharmacopoeial standards of raw and prepared drugs | (20 practicals) |

Raw Materials

1. Minerals and Metals

Mineralogical Identification

1. Physical form - Crystal and Amorphous
2. Hardness on Moh's scale
3. Brittleness test
4. Fracture and Cleavage
5. Streak test
6. Luster

2. Plant Material

Macroscopic and Microscopic examination

1. Organoleptic testing
2. Estimation of Foreign materials
3. Microbial load
4. Moisture content
5. Determination of ash value - total, water soluble and acid Insoluble ash
6. Specific gravity
7. Solubility- water and alcohol
8. Extract values- water and alcohol
9. TLC
10. Determination of optical density
11. Refractive index
12. Aflatoxins
13. Limit tests for heavy metals
14. pH estimation

Prepared dosage forms:

1. Solid dosage forms

Rasaushadhi

- a) Bhasma and Pishti Pariksha
- b) Determination of Particle size
- c) Limit tests for heavy metals
- d) Determination of moisture content, specific gravity, pH and acid value.

Kasthaushadhi

a. Powders (Churna)

1. Particle size
2. Bulk density
3. Solubility
4. Estimation of Foreign material
5. Microbial load
6. Moisture content
7. Determination of ash value - total, water soluble and acid insoluble ash
8. Solubility - water and alcohol
9. Extract values - water and alcohol
10. TLC
11. Determination of Optical density
12. Refractive Index
13. Aflatoxins
14. Limit tests for Heavy metals
15. pH Value estimation

b. Tablets

1. Uniformity in weight and size
2. Tablet hardness
3. Tablet friability
4. Tablet disintegration
5. Tablet dissolution

c. Semisolid dosage forms

1. Moisture content
2. Sugar content
3. Microbial load

d. Liquids

1. pH value
2. Specific gravity
3. Determination of refractive index
4. Acid value
5. Viscosity
6. Saponification value
7. Iodine value

Note:

- All practicals should be performed in accordance with Authoritative Text Books of Schedule-I of D.C.Act-1940.
- All practicals related to Pharmacopoeial Standards should be performed in accordance with Methods Published in Protocol for testing of ASU Medicines and Laboratory Guidelines for the Analysis of Ayurveda & Siddha Formulations published by Deptt. of AYUSH, Government of India.

Distribution of marks (Practical)

- | | |
|--|------------|
| 1. Practical Record Book | - 10 Marks |
| 2. Practical related to Preparation of Drugs | |
| a. Major practical- one | - 20 Marks |
| b. Minor practical- one | - 10 Marks |
| 3. Drug analysis | |
| a. Major practical- one | - 20 Marks |
| b. Minor practical- one | - 10 Marks |
| 4. Spotting | - 10 Marks |
| 5. Viva-voce | - 20 Marks |

REFERENCE BOOKS:

1. Rasahridaya Tantra
2. Rasarnava
3. Rasaratna Samuccahaya
4. Ayurved Prakasha
5. Rasendrachudamani
6. Rasendra Chintamani
7. Rasatarangini
8. Rasapraksha Sudhakar
9. Rasamrita
10. Rasa Chandanshu : CCRAS Publication
11. Sharangadhara Samhita
12. Sharangadhara Darpan (BP Pandey)
13. Bhavaprakasha
14. Yoga Ratnakara
15. Bhaishajya Ratnavali
16. Siddha Bhaishajya Manimala
17. Bharat Bhaishajya Ratnakara

18. Rasayoga Sagara
19. Siddha Bhaishajya Manimala
20. Sahasrayoga
21. Siddha Yoga Sangraha – Yadavaji Trikamji Acharya
22. Vaidyaka Paribhasha Pradeepa
23. Ayurvediya Aushadhikarana – Puranik and Dhamanakar
24. Dravyaguna Vijnan Part - 1 and 2 - Yadavji Trikamji
25. Chakradatta - Ratnaprabha, Relevant Parts from Charaka Samhita, Sushruta Samhita, Kashyapa Samhita, Ashtanga Sangraha, Ashtanga Hridaya,
26. Remington: Science and Practice of Pharmacy
27. Theory and Practice of Industrial Pharmacy – Leon Lachman *et al*
28. Clinical Pharmacology, KD Tripathi
29. Clinical Pharmacology, Lawrence Benette
30. Drug Discovery and Evaluation (Pharmacological assays) HG Vogel
31. Pharmacological Basis of therapeutics – Goodman and Gilman
32. Data Base of Medicinal Plants of CCRAS
33. Quality and Standards of Medicinal Plants – ICMR publication
34. Quality Control of Ayurvedic Drugs – PLIM, Gaziabad
35. Ayurvedic Pharmacopeia of India
36. Ayurvedic Formulary of India
37. Indian Pharmacopeia
38. British Pharmacopeia
39. United States Pharmacopeia
40. Pharmacopeia Codex
41. Current Good Manufacturing Practices
42. Drugs and Cosmetic Act 1940 and Rules 1945 with latest amendments
43. Drugs and Magic remedies (Objectionable advertisement) Act-1954
44. Prevention of Food Adulteration (PFA) act
45. Laws pertaining to Narcotics
46. Factory and Pharmacy Acts
47. Consumer Protection Act -1986
48. Brief information on the peer reviewed journals, official websites and other official search engines along with their links (related with the subject)
49. Rutleys Elements of Mineralogy
50. Bhasma Vigyaniam
51. Kupipakva Vigyaniam
52. Anupana Manjari

M.D.-AYURVEDA PRELIMINARY
6. AGADTANTRA AVUM VIDHI VAIDYAKA
(Toxicology & Forensic Medicine)

PAPER-II
PART-A

Theory 100 marks
50 marks

1. Introduction to Agadatantra, its sequential development, traditional and contemporary toxicology.
2. Examination of poisons as per contemporary and Ayurvedic methods.
3. Ancient and contemporary classification of Visha.
4. Knowledge about Sthavara visha, Jangama visha and Kritrima visha, their clinical and pathological manifestations and management.
5. Garavisha and Dushi visha, signs, symptoms and management with contemporary relevance.
6. Vishajanya Janapadodhvamsaniya Roga (community health problems due to poisons) - environmental pollution, water pollution, soil pollution, air pollution etc, their features and management according to ancient and contemporary concepts.
7. Concept of Viruddhahara with contemporary views.
8. Definition of Vyavahara Ayurveda.
9. Fundamentals of Vyavahara Ayurveda. Courts of law in India and legal procedures.
10. Chaturvinshati upakrama (24 management procedures).

PART-B

50 marks

1. Introduction to Forensic medicine.
2. Techniques of pathology, pharmacology, pharmacognosy and microbiology used in toxicology.
3. Death and its medico-legal aspects (Medical Thanatology), Medico-legal autopsy, Legal procedures in clinical forensic medicine.
4. Forensic Science Laboratory:- Structure and functions
5. Introduction to Medical Jurisprudence.
6. Laws related to medical profession. Ancient practice of medical jurisprudence in india.
7. Ancient and contemporary fundamentals of medical ethics.
8. Madya visha (Alcoholism).
9. Diagnosis and Management of food poisoning.
10. General and Emergency medical management of poisoning including preparation, administration and complications of antidotes, antivenoms, antisera.
11. Management of the toxic manifestations caused by the contact poisons (paduka, vastra, abhushana, mukhalepa- vishabadha etc).
12. Diagnosis and management of dermatological manifestations of Visha.
13. Death due to poisoning, duty of physician in poisoning and cases of suspected poisoning.
14. Post mortem findings in poisoning.

PRACTICAL

50 marks

Contents:

Clinical Postings

Case records – 20 cases (Postmortem/ poisoning/dermatological/medico legal cases)

Distribution of marks (Practical)

- | | |
|---|------------|
| 1. Case records (20 Cases) | - 20 Marks |
| 2. Bedside clinical case taking | |
| 3. Identification of specimens, models and Equipments of jurisprudence importance | -15 Marks |
| 4. Spotting related to Visha, Upavisha and other poisonous drugs | -15 Marks |
| 5. Viva-voce | -20 marks |

REFERENCE BOOKS:

- | | |
|--|-----------------------------|
| 1. Useful Portion of Charak-Sushrut-Vagbhata | |
| 2. Dravyaguna Vigyan | - Acharya Yadavji |
| 3. Aushadhigunadharm Shastra | - Pt Visvanath Dvivedi |
| 4. Kriyatmat Aushada parichaya Vigyan | - Pt Visvanath Dvivedi |
| 5. Ayurvedic Vyadhi Vigyan | - Acharya Yadavji Trikamji |
| 6. Madhavanidan with Madhukosha commentary | |
| 7. Sharangadhara Samhita | |
| 8. Yogaratnakara | |
| 9. Aushadigunadharm Shastra | - PtGangadhara Shastri Gune |
| 10. Rasendracintamani | |
| 11. Rasaratna samuchhaya | |
| 12. Vishavigyan | - Dr. Krishna Kumar |
| 13. Related matter of Kautilya Artha Shastra | |
| 14. Harmekhlatantra | |
| 15. Anupana manjari | |
| 16. Ayurvedprakash | |
| 17. System of clinical Medicine | - Savil |
| 18. Forensic Pharmacy | - B.M. Mhithai |
| 19. Hand book of Forensic Medicine and toxicology | - Dr. P.V. Chadha |
| 20. Viva Forensic Medicine and toxicology | - L.C. Gupta |
| 21. Forensic Medicine and Ethics | - J.P. Narena |
| 22. Modi's Medical Jurispudence and Toxicology | |
| 23. The essentials of forensic medicine and toxicology | -Dr.K.S. Narayan Reddy |
| 24. Medical Laws and Ethics | - Dr. H.S. Mehta |
| 25. M.R.K. Krishnan's Handbook of Forensic Medicine | |
| 26. Text book of Medical Jurisprudence and Toxicology | - Dr. C.K. Parikh |
| 27. Atlas of Forensic Medicine | - Dr. Tomio Watenbe |
| 28. Medico legal Post Mortems (Atlas) | - Dr. Parikh and Others |
| 29. Textbook of Forensic Medicine and Toxicology | - Dr.V.V. Pillay |
| 30. Textbook of Forensic Medicine and Toxicology | - Dr. Karmakar |
| 31. Textbook of Forensic Medicine and Toxicology | - Dr. Singhal |
| 32. Textbook of Forensic Medicine and Toxicology | - Dr. Krishnan Vij |
| 33. Forensic Pathology | - Dr. Bernard Knight |

34. Textbook of Forensic Medicine and Toxicology - Lyon's
35. Pocket picture guide to Forensic Medicine - Gower's Medical Publication
36. Forensic Medicine - Simpson Knight
37. Taylor's Principles and Practical of Medical Jurisprudence - J and A Churchis
38. Doctor and Law - Singhal
39. Textbook of Toxicology - Singhal
40. Medicine Harrison's Principal of Internal Medicine
41. Agad Tantra - Dr.Shekhar Namboodri
42. Modern Medical Toxicology - Dr. V.V.Pillay
43. Critical care toxicology - Bruent Wallace
44. Diagnosis and Management of common poisoning - Agarwal wali
45. Colour Atlas of Forensic Medicine - Govindaiah
46. Guidelines of poisons - W.H.O.
47. Doctors patients relationships - Dr.Lavekar
48. Bhavaprakasha.
49. Vishavaidya Jyotsnika - English translation By VPSV Ayurveda college, Kottakkal.
50. Lakshnamritham.
51. Toxicology, Ayurvedic perspective - VPSV Ayurveda college Kottakal
52. Text book of Agadatantra - Edited By Dr Huparikar, Dr.Joglekar
53. Agadatantra ki Pathyapustaka - Edited By Dr Huparikar, Dr. Joglekar
54. Vyavahar Ayurveda Vigyanam - Dr.Indramohan Jha (Sachchan)
55. Forensic Medicine - Dr. B. Umadathan
56. Visha Chikitsa - Dr. M. Balakrishnan Nair
57. Park Text book of Preventive and Social Medicine. - K. Park
58. Environmental Science and Biotechnology - Theory and Practice
- A.G. Murukesan &C. Rajakumari
59. Veterinary Toxicology - Dr. Satish K. Gargi
60. Guide to Drinking Water Quality (3 Volumes) - WHO Publication
61. A short Text Book of Medical Entomology - H.S. Bhatti, R. Sehgal, R.C. Mahajan.

M.D.-AYURVEDA PRELIMINARY
7. SWASTHAVRITTA & YOGA
(Preventive, Social Medicine & Yoga)

PAPER-II
PART A

Theory 100 marks
50 marks

1. Importance and relevance of Swasthavritta and Community Medicine. History of community medicine.
2. Concept of health and disease as per Ayurveda and Modern Medicine. Various definitions and dimensions of health as per Ayurveda and World Health Organization.
3. Relevance of Dinacharya, Ratricharya and Ritucharya in Health Promotion.
4. Basic concept of Vega. Concept of Adharaniya and Dharaniya Vega in health promotion and prevention of diseases with examples.
5. Concept of Trayopastambha in health promotion and prevention of diseases.
6. Concept of nutrition as per Ayurveda and modern science.
7. Concept of Vyadhikshamatva. Concept of Bala and Ojas in relation to health.
8. Role of Panchakarma in preventive medicine.
9. Role of Rasayana in promotion of health and prevention of diseases. Scope of Rasayana in Geriatrics and Reproductive & Child Health.
10. The concept of Ashtanga Yoga and its relation to health. Concept of Moksha.
11. Basic concepts of Nisargopachara including Panchabhautika Chikitsa.

PART B

50 marks

1. Concept of Janapadodhwamsa and tools of its prevention.
2. Principles of Epidemiology. Definitions in infectious disease epidemiology.
3. Concept of disease control and intervention strategies.
4. Levels of disease prevention
5. Basic principles of Samkramak Vikara- causes, modes of disease transmission, epidemiological triad
6. Principles of Health Education
7. Environmental Health- concept of water, soil and air purification as per Ayurveda and modern science.
8. Introduction to Meteorology
9. Role of Swasthavritta in maternal and child health care.
10. National Population Policy, National Health Policy as per Alma Ata Declaration and Role of Ayurveda therein.
11. Role of Swasthavritta in communicable and non-communicable diseases and life style disorders.
12. Biomedical waste management.
13. National health programmes.

PRACTICAL

100 marks

Contents:

1. Duty in OPD and IPD with regard to Pathyapathya, Yoga and Nisargopachar
2. Preparation of different Kritanna Kalpana
3. Practice of the following
 - A. Pratimarsha Nasya
 - B. Anjana
 - C. Kavala and Gandusha
 - D. Abhyanga
 - E. Udvartana
 - F. Prayogika Dhoomapana
 - G. Matra basti
4. Health awareness lectures to the community (minimum 5)
5. Participation in observance of National & International days related to health.
6. Proficiency in performing the following Asanas
 - Standing Postures-
Ardhakatichakrasana, Padahasthasana, Ardhakachakrasana, Trikonasana.
 - Sitting postures –
Swasthika, Gomukha, Padmasana, Vajrasana, Bhadrasana, shashankasana, Ushtrasana, Pashchimottanasana, Suptavajrasana, Ardhamatsyendrasana, Siddhasana.
 - Supine Postures-
Pavanamuktasana, Sarvangasana, Matsyasana, Halasana, Chakrasana, Shavasana.
 - Prone postures-
Bhujangasana, Shalabhasana, Dhanurasana, Makarasana.

Distribution of marks (Practical)

- | | |
|---|------------|
| 1. Records | - 20 Marks |
| 2. Long Procedures | - 20 Marks |
| 3. Short Procedures | - 10 Marks |
| 4. Spotting - Aahardravayas, Family Planning
Devices, Vaccine/Serum and Models/Specimens,
Naturopathic and Yogic specimens etc. | - 10 Marks |
| 5. Yogasana | - 20 Marks |
| 6. Viva-voce | - 20 Marks |

REFERENCE BOOKS:

1. Relevant portions of Charak, Sushruta, Vagbhata (AshtangHrudaya), Ashtang Samgraha, Sarangadhara, Bhavaprakasha, Madhavanidan & Yogaratnakara, Bhela Samhita with the respective commentaries
2. Swasthavritta Samuchaya -Vaidya Pt Rajesvar Dutta Shastri
3. Swasthya Vignyana -Dr.B.G.Ghanekar Shastri
4. Prakritika Chikitsa -Kedarnath Gupta
5. Reddy's Comprehensive Guide to Swasthavritta -Dr.P.Sudhakar Reddy
6. Swastha Vignyan -Dr.Mukundswaroop Verma
7. Ayurvediya Hitopdesh -Vd.Ranjit Rai Desai
8. Yoga and Ayurveda -Dr.Rajkumar Jain

- | | |
|---|--------------------------------------|
| 9. Swasthvritta Vigyan | -Dr.Ramharsha Singh. |
| 10. Swasthvrittam | - Dr.BramhanandTripathi |
| 11. Ayurvediya Swasthvrittam | - Vd.Jalukar |
| 12. Hathayog Pradipika | - SwatmaramYogendra (Kaivalyadhama) |
| 13. YogikYog Paddhati | - BharatiyaprakrutikChikitsaPadhat |
| 14. Yogik Chikitsa | - ShriKedarnath Gupta |
| 15. Prakrutik Chikitsa Vigyan | - Verma |
| 16. Janasankhyashikshasidhanta evam Upadesa | - S.C.Seel |
| 17. Swasthvritta | - Dr.Shivkumar Gaud |
| 18. Health and Family Welfare | - T.L.Devra |
| 19. SachitraYogasan Darshika | - Dr.IndramohanJha |
| 20. Preventive and Social medicine | - J.K.Park |
| 21. Yogadeepika | - Shri. B.K.S. Iyengar |
| 22. Swasthavritta | - Vd.Sakad |
| 23. Positive Health | - Dr.L.P.Gupta |
| 24. Biogenic Secretes of Food In Ayurveda | - Dr.L.P.Gupta |
| 25. Yoga and Yogikchikitsa | - Ramharsha Singh |
| 26. The Foundation of Contempary Yoga | - R.H.Singh |
| 27. Yogasidhanta evum Sadhna | - H.S.Datar |
| 28. Patanjali Yoga Sutra | - Maharshi Patanjali, Karambelkar |
| 29. Prakrutik Chikitsa Vidhi | - Sharan Prasad |
| 30. Text book of Swasthavritta | - Dr.Ranade, Dr.Bobade, Dr.Deshpande |
| 31. Gherand Samhita | |
| 32. Bio-Statistics | - B.K. Mahajan |
| 33. Swasthavritta Vidnyan | - Dr.Mangala Gauri |
| 34. Community Medicine | - Baride and Kulkarni. |
| 35. Light on Yoga | - Shri. B.K.S. Iyengar |
| 36. Light on Pranayama | - Shri. B.K.S. Iyengar |
| 37. Light on Patanjala Yogasutra | - Shri. B.K.S. Iyengar |
| 38. Shiva Samhita | - Kaivalyadhama |
| 39. Gheranda Samhita | - Kaivlyadhama |
| 40. Swasthavritta Vigyan | - Vd. Patrikar Vijay |
| 41. Swasthavritta | - Vd Yashwant Patil and Vd. Vhawal |
| 42. Food and Nutrition | - Swaminathan |
| 43. Preventive and Social Medicine | - Mahajan |
| 44. Preventive and Social Medicine | - B.N.Ghosh |
| 45. Preventive and Social Medicine | - Gupta |
| 46. Yoga and Nisargopachar | - Vd. Prama Joshi |

M.D.-AYURVEDA PRELIMINARY
8. ROGA NIDANA AVUM VIKRITI VIGYAN
(Pathology and Diagnostic Procedure)

PAPER-II

Theory 100 marks

PART-A

50 marks

1. Understanding of Samprapti of diseases in Charaka Nidana Sthana in contemporary context
2. Clinical aspects of Dosha, Dhatu, Upadhatu, Mala, Agni, Ama, Srotas and Indriya
3. Understanding of the role of Trividha Avasthapaka in the vitiation of Dosha
4. Concept of Nanatmaja and Samanyaja Vikara
5. Clinical application of Avarana in diagnosis of various diseases
6. Clinical application of Shatkriyakala in diagnosis of diseases.
7. Clinical and applied aspects of concept of Upadrava and Arista

PART-B

50 marks

1. Ayurvedic interpretation of various laboratory investigations to derive treatment principles.
2. Interpretation of various Rogi Bala and Roga Bala technique to plan Chikitsa Sutra
3. Clinical examination of Deha Bala, Roga Bala, Agnibala And Chetas Bala
4. Knowledge of current diagnostic tools like ECG, X-Ray, CT scan, MRI and USG

PRACTICAL

100 marks

Contents:

1. Duty in hospital OPD and IPD.
2. Duty in pathology laboratory.
3. Case taking – 25 cases
4. Performance of pathology and biochemistry practicals – 10 cases
5. Interpretation of ECG, EEG, X-ray, CT-Scan, MRI and USG

Distribution of marks (Practical)

- | | |
|---|------------|
| 1. Case record (25 Cases) | - 10 Marks |
| 2. Bed side clinical case taking | |
| a. Long case | - 20 Marks |
| b. Short case | - 10 Marks |
| 3. Laboratory Practicals | - 20 Marks |
| 4. Interpretation of ECG, EEG, X-ray,
CT-Scan, MRI and USG | - 10 Marks |
| 5. laboratory experiment record | - 10 Marks |
| 6. Viva-voce | - 20 Marks |

REFERENCE BOOKS:

1. Madhav Nidan (Madhukosha Commentary)
2. Relevant portions of Charak Samhita, Sushrut Samhita and Vagbhata
3. Doshakaranatwa Mimamsa - Acharya P.V. Sharma
4. Nadi pariksha - Vb Athavale
5. Nadi Pariksha - GP Upadhyay
6. Rogi Pariksha vidhi - Acharya Priyavrata Sharma
7. Nidan Panchak - Shivcharan Dhyani
8. Vyadhivigyan I and II - Yadav Thrikamji
9. Ayurvediya Roga Vargikaran - Vd. Ramanat Vd. Gurdip Singh
10. Ayurvediya Nidan Evum Chikitsa Ke Siddhanta - Prof. Ram Harsh Singh
11. Clinical methods in Ayurveda - K. R . S. Murthy
12. Parameswarappa's Ayurvediya Vikriti Vigyan
& Roga Vikriti Vigyan - Dr. P.S. Byadgi.
13. Oxford Handbook of Clinical Examination and Practical Skills
14. Symptoms & Signs in Clinical Medicine - Chamberlains
15. Hutchison's Clinical Methods
16. Bedside Clinics in Medicine Part- I & II - Kundu
17. Practical Pathology - Dr. K. Uma Chaturvedi
18. Medical Laboratory Technology - R. Sood
19. Clinical Diagnosis and Management
by Laboratory methods - Todd, Sanford and Davidson

M.D.-AYURVEDA PRELIMINARY
9.CHHAYA AVUM VIKIRAN VIGYAN
(Imaging and Radio diagnosis)

PAPER-II
PART A

Theory- 100 marks
50 marks

1. Objectives of Chhaya avum Vikiran Vigyan.
2. History, development and concept of Chhaya avum Vikiran vigyan
3. Poorva karma (preparatory measures) related to Chhaya avum Vikiran Vigyan in relation to consultant, technical staff and patients (with their attendants) including counseling and consent.
4. Review of fundamental principles of Ayurveda.
5. Shishyopanayan regarding the Chhaya avum Vikiran Vigyan – introduction of Chhaya avum Vikiran department and hospital unit, guidelines for their use, do's and don'ts, discipline, duties and responsibilities.
6. Ethical and legal issues related to Chhaya avum Vikiran Vigyan.
7. Precautions and preventions in Chhaya avum Vikiran Vigyan unit.
8. Environmental issues related to Chhaya avum Vikiran Vigyan. Impact of used radiological energies on environment.
9. Disposing and recycling of radiological materials. Biomedical waste disposal management in Chhaya avum Vikiran Vigyan.
10. Management of Chhaya avum Vikiran Vigyan department. Relation between consultant, student, technical staff, patients (with their attendants).
11. Basic concept of research methodology related to Chhaya avum Vikiran Vigyan.

PART B

50 marks

1. Preliminary knowledge of various modalities of Chhaya avum Vikiran Vigyan.
2. Efficiency and limitations of various radiological modalities.
3. Introduction of surface and applied anatomy, patho-physiology related to Chhaya avum Vikiran Vigyan.
4. Preliminary knowledge of equipments related to radiology.
5. Selection of appropriate radiological modalities- basis of selection, correct radiological investigation advice, further assessments and diagnostic advice.
6. Management of emergencies in radiology section, electrical and mechanical violent emergencies, radiation hazards and its preventive measures.
7. Pharmacology and application of emergency drugs, analgesics, muscle relaxants, fluids, plasma expanders, oxygen and various contrast media used in Radio-diagnosis and imaging.
8. Drug and contrast media reactions and shock - its management, cardio-cerebro-pulmonary resuscitation (CCPR), endo-tracheal intubation, tracheostomy.
9. Anesthesiology related to radiology.
10. Short review of common diseases, frequently investigated in the Chhaya avum Vikiran Vigyan department especially their clinical findings, anatomical and patho-physiological changes.
11. Skills of transfer of knowledge- Teaching methodology, audio-visuals preparation and presentations.
12. Knowledge of Information Technology – relevant to radiology.
13. Record keeping.
14. Documentation, books and journals, research paper writing.

PRACTICAL

100 marks

Contents:

- Evaluation of knowledge of functioning of equipments
- Evaluation of knowledge of Chhaya avum Vikiran Vigyan procedures
- Management of Chhaya avum Vikiran vigyan department
- Management of emergencies in Chhaya avum Vikiran Vigyan unit
- Personality development assessment.
- Basic knowledge of concepts of radiological interpretations

Distribution of Marks (practical):

1. Case Records of 25 patients	20
2. Chhaya avum Vikiran Vigyan procedures -	
1. Long procedure	20
2. Short procedure	10
3. Identification and functioning of instruments and equipments	15
4. Interpretation of Radiograph and images	15
5. Viva Voce	20

REFERENCE BOOKS:-

Shusruta Samhita	Relevant part
Charak Samhita	- do-
Astang Hridaya/Sangrah	- do-
Text Book of Radiographic Positioning and Related Anatomy	- By Kenneth L Bontrager, John P Lampignano
Radiographic interpretation to general practitioner	-W.H.O.
Procedures in diagnostic Radiology	- By T. Doyle, W. have, K. Thomson.
Radiographic positioning	- By Clark
Radiobiology for the Radiologist	- By Hall.Christensen's
Physics of Diagnostic Radiology	- By Curry T S , Dowdey J E ,Murry R C
Farr's Physics for Medical Imaging	- By Penelope Allisy- Roberts , jerry Williams
Fundamental of Diagnostic Radiology	- By Brant.
Diagnostic Imaging	- By Federle
Diagnostic Imaging	- By Peter Armstrong , Martin Wastie , Ansrea Rockall
Gastrointestinal radiology	- R.L. Eisenberg
Uro-radiology	- T.Sherwood, A.J.Davidson, .B.Talner
Grainger and Allison's Diagnostic Radiology	-Text book of medical imaging
Text Book in Radiology and Imaging	- By D. Sutton.
Introduction to Vascular Ultrasonography	- By Zwiebel , Pellerito
Text book in Ultrasonography	- By Roumack
Manual of Medical Diagnostic Ultrasonography	- By W.H.O. Scientific group

Computed Tomography & MRI of the whole body
Surface and Radiological Anatomy
X-Ray equipment for student Radiographers
Clinical Sonography , A Practical Guide

- By Hagga.
- By A. Halim
- By DN and MO Chesney
- By Roger C. Sanders ,
Tom Winter

Ultrasonography in obstetrics and gynaecology
Standard Journals like Indian Journal of Radiology, Radiology, Radiological clinics of north
America, British Journal of Radiology etc.
Audio-visual aids

- Callen
- CDs & DVDs

M.D.-AYURVEDA PRELIMINARY

**10.KAYACHIKITSA
(Genral Medicine)**

**PAPER-II
PART A**

**Theory- 100 marks
50 marks**

1. Understanding of fundamental concepts of Kayachikitsa like Vriddhi and Kshaya of Dosha, Dushya, Mala with Amshaamsha Kalpana. Srotodushti, Khavaigunya, Agni, Ama (Saama and Nirama Dosha, Dhatu & Mala). Aavarana, Rogamarga, Ashayapakarsha, Dosha Gati, Kriyakala. Aushadha Sevana Kala, Anupana, Pathya-Apathya and their scientific relevance during health and disease.
2. Detailed knowledge of Rogi Roga Pariksha including detailed history taking and systemic examination of patient. Clinical implementation of Dwividha Pariksha, Trividha Pariksha, Chaturvidha Pariksha, Panchavidha Pariksha, Shadvidha Pariksha, Ashtavidha Pariksha, Dashvidha Parikshya Bhavas and Prakrityadi Dashvidha Pariksha.
3. Principles of Kayachikitsa in disease management including Shodhana, Shamana and Naimittika Rasayana.
4. Introduction of the basic principles of Modern medicine, Homeopathy, Unani, Siddha, Tibetan Medicine, Yoga and Naturopathy and their relevance in light of the basic principles of Ayurvedic medicine.

PART B

50 marks

1. Chikitsa Siddhanta of Pranavaha, Annavaha, Udakavaha, Rasadi Dhatuvaha, Malavaha & Manovaha Srotovikara.
2. Emergency medicine: Acute Severe Asthma, pulmonary oedema, myocardial infarction, cerebro-vascular accidents, water and electrolyte imbalance, haemorrhage, syncope, seizure, coma, hyperpyrexia, hypertensive encephalopathy.
3. Knowledge of conducting various medical procedures like infusions, tapping, lumbar puncture, Ryle's tube insertion, catheterization, tractions, water seal drainage, Cardio Pulmonary Ressucitation.
4. Basic knowledge of underlying principles of ECG, TMT, echo cardiography, vascular doppler studies, EEG, EMG, X-Ray, USG, CT scan, MRI, PET and their interpretation.
5. Knowledge of common Ayurvedic formulations and preparations used in treatment:
Churna- Triphala, Sitopaladi, Lavanbhaskara, Hingvashtaka, Avipattikara, Gangadhara, Shaddharana, Sudarshana, Panchasakara, Ajmodadi.
Kashaya- Dashamula, Rasnasaptaka, Asanadi, Pathyadi, Phalatrikadi, Punarnavashtaka, Gojivhadi, Mahamanjishthadi, Drakshadi Kashaya.
Asavas-Arista- Amritarishta, Kanakasava, Chitrakasava, Saraswatarishta, Ashwagandharishta, Chandanasava.
Vati- Sanjivani, Chandraprabha, Agnitundi, Chitrakadi, Khadiradi, Vyoshadi, Shankha Vati, ShivaGutika.
Guggula-Kalpana- Triphalaguggula, Kaishoraguggula, Trayodashangaguggula, Simhanadaguggula, Yogarajaguggula, Gokshuradi guggula, Kanchanaraguggula.
Rasaushadhi- Tribhuvanakirti Rasa, Arogyavardhini Rasa, Shwasakuthara Rasa,

Rasamanikya Rasa, Smritisagara Rasa, Lakshmililasa Rasa, Sutshekhara Rasa, Pravala Panchamrita-Parpati, Hemagarbhapottali-Rasa.

Taila- Mahanarayana Taila, Pindataila, Prasariyadi Taila, Ksheerabala Taila, Brihat Saindhavadi Taila, Panchaguna Taila, Amritadi Taila, Marichyadi Taila, Mahamasha Taila.

Ghrita- Mahatriphaladi Ghrita, Brahmi Ghrita, Panchtikta Guggulu Ghrita, Sukumara Ghrita, Dadimadya Ghrita, Kantakari Ghrita, Kalyanaka Ghrita.

Lehya- Chyavanaprasha Avaleha, Kushmanda Avaleha, Ashwagandha Avaleha, Agastya Hareetaki Rasayana, Drakshavaleha, Vasavaleha, Amrita-Bhallataka Rasayana

PRACTICAL

100 marks

Content:-

Daily hospital duties in OPD, IPD and casualty
Bed-side case taking – 25 patients

Distribution of marks (practical):

1. Case records of 25 Patients in detail	20 marks
2. Bedside clinical case taking- Long case	20 marks
Short case	10 marks
3. Medical procedures/laboratory work	15 marks
4. Instruments and spotting	15 marks
5. Viva voce	20 marks

REFERENCE BOOKS-

Charak Samhita	-Cakrapanidutta commentry
Sushrut Samhita	-with all available commentaries.
Ashtang Samgraha	-Indu commentary
Ashtang Hridaya commentry	-Arundutta and Hemadri
Cikitsadarsha	- Pandit Rajesvardutta Shastri
Kayachikitsa	- Ramaraksha Pathak
Rog Pariksha Vidhi	- Priyavrat Sharma
Panchakarma Vigyan	- Haridas Sridhar Kasture
Ayurved Nidan Chikitsa Siddhanta	- Prof. R.H.Singh.
Kayachikitsa Vol. I-IV.	- Prof. Ajay Kumar
Davidson's Principles and Practice of Medicine.	
API Text Book of Medicine.	
Harrison's Text Bok of Medicine.	
Cecil Text Book of Medicine.	
Relevant texts of concerned subjects.	

M.D.-AYURVEDA PRELIMINARY
11. MANO VIGYAN AVAM MANAS ROGA
(Psychiatry)

PAPER-II
PART A

Theory- 100 marks
50 marks

1. Concept of Manas in Sankhya, Yoga, Nyaya, Vaisheshika, Purva Meemamsa, Vedanta, Bouddha, Tantra and Purana. Philosophical concepts in Ayurveda and its applications.
2. Basic principles of Ayurveda psychology - Srishti utpatti, Triguna, Loka purusha samya Siddhanta, determination of Purusha according to Dhatubheda, Chikitsadhikrita purusha in a psycho somatic axis, Perception and cognition in Ayurveda. Dosha, Dhatu, Agni, Mala Vigyanam and its psychosomatic importance, 'Shariramapi Sattvamanuvidhiyate Sattvam Cha Shariram'. Concept of Dharma, Artha, Kama and Moksha, concept of Apunarbhava in Ayurveda, Trividha Eshana.
3. Introduction to psychoanalytical concept – Id, Ego, Super ego. Concept of mind in Western psychology
4. Concept of Mana in Ayurveda, Mano Nirupana, Manaswarupa, Sthana, Vishaya, Karma, Guna and Dosha. Manovyapara, Gyanotpatti, Gyanotpattau Manaso Dayittwam. Manas as 'Cheshta Pratyayabhutam Indriyanam Indriyo-Pakramaniyam'. Atma nirupana, Atmaguna.
5. Psychological Processes – Attention and perception, intelligence, creativity, motivation, emotion, sex and other drives, states of consciousness, learning, memory, cognition and dream, knowledge of developmental psychology.
6. Understanding of Manasika bhava / Manovikara and their importance in Manasroga Nidana and Chikitsa – Icha, Dwesha, Sukha, Dukha, Lobha, Moha, Krodha, Shoka, Vilapa, Preeti etc. Emotional aspects of human behaviour.
7. Manovaha Sroto Nirupana, basics of neurophysiology, neurotransmitters, psychoneuroimmunology, physiological basis in human behaviour, influence of nervous system on human behaviour, sensory systems, autonomic nervous system, study of Ojas, Gyanendriya and Buddhi.
8. Satvikadi Kayanam samanya gyanam, basic concepts of personality, Sattvabala and mental disorders.
9. Manasroga samanya nidana, Pragyaparadha- samkshipta vivarana. Vibhramsha of Dhee, Dhriti and Smruti, Mano Dosha and Sharir Dosha in psychopathogenesis, Sadvritta and its importance.
10. Relation of psychology with parapsychology.

PART B

50 marks

1. Basic understanding of Sattva Pariksha , utility of Trividha, Shadvidha, Ashta Sthana, Dashavidha and Srotopariksha in psychiatric practice, Vikriti pariksha- Vibhrama of Mano -Buddhi- Samgya Gyan-Smriti-Bhakti-Sheela-Cheshta and Achara.
2. Psychiatric examination- Mental status examination, mini mental status examination, cognitive assessment with higher mental functions, personality and self in psycho analysis, basic psychiatric assessment inventories- Hamiltons scale, Bech's inventory, GRISS questionnaire, Weschlers' scale for intelligence.
3. Clinical psychology – General psychology with schools of psychology, theories of personality development, social dimensions of behavior and current issues, doctor patient relationship, patient interviewing and study of therapeutic relationship. Basic knowledge about anxiety disorders, delusional disorders, phobic disorders, lying, stealing, juvenile delinquency. Mental hygiene and behaviorism.
4. Technical terms used in psychiatric practice, general symptoms of psychiatric disorders, classification of psychiatric disorders as per DSM and ICD classifications.

5. Basic knowledge about organic psychosis, psychoneurosis, Schizophrenia, mood disorders, personality disorders, sexual perversions, sleep disorders and mental retardation.
6. Basic understanding of Bhuta, Graha and Bhutavidya. Hetu, Lakshana and Samprapti of Unmada, Apasmara, Atattwabhinivesha, Grahavesha, Bhutonmada, Gadodvega, Yoshapasmara, Madatyaya.
7. Nidra and Swapna, its types and role in psychopathogenesis.
8. Basic understanding of Chikitsa bheda, descriptions of general and specific principles of Kayachikitsa, its practical application in Manasroga, Daivavyapashraya, Yuktivyapashraya, Satvavajaya chikitsa and Dravya-adravya chikitsa, Manodosha Samanya chikitsa, basic treatment principles in Manasika vyadhi, Panchkarma and its application in Manasika roga, Importance of Rasayana and Vajikarana therapies in Psychiatric practice, Medhya rasayana.
9. General knowledge in the basic management principles of psychiatric disorders in modern medicine. Basic knowledge on psychopharmacology, forensic psychiatry, community psychiatry, liaison psychiatry, child psychiatry and geriatric psychiatry.
10. Application of psychiatric knowledge in other specialities viz. Kayachikitsa, Agadatantra, Shalya, Shalakyas, Prasuti- Stri Roga and Kaumarabhritya.
11. Psychosomatic disorders, psychological understanding on essential hypertension, asthma and other allergic disorders, psoriasis, IBS, ulcerative colitis, CAD, tension /vascular headaches, pseudopsychosis, hyperemesis gravidarum, enuresis, diabetes mellitus, obesity, autoimmune disorders, neoplasm and psychosexual disorders.
12. Basic understanding of diagnostic applications- Haematological, biochemical, serological, histopathological, imaging - ECG, EEG, USG, MRI scan, CT scan, PET scan in psychosomatic, psychiatric and neuro- psychiatric practices.

PRACTICAL

100 marks

Contents:

1. Daily hospital duties in OPD, IPD and casualty
2. Practical Record Book
 1. Psychiatric – 5 cases
 2. Psychosomatic – 5 cases
 3. Paediatric / Geriatric Psychiatry – 5 cases
 4. Psychosexual / Substance abuse – 5 cases
3. Psychiatric Inventories- MMSE, Hamilton Anxiety Depression Rating Scale, Brief Psychiatric Rating Scale, Bech's Depressive Inventory, Weschlers' scale, GRISS questionnaire -2 Cases each
4. Manasa Bhava assessment scales- Sattvabala, Manasa Kaya, Smriti, Buddhi, Raja and Tama rating, Manas Bhava Pariksha –2 cases each

Distribution of marks (Practical)

- | | |
|--|------------|
| 1. Case records of Patients in Detail (25 Cases) | - 20 Marks |
| 2. Bedside clinical case taking | |
| Long case | - 20 Marks |
| Short case | - 10 Marks |
| 3. Procedure | - 15 Marks |
| 4. Instruments & Spotting | - 15 Marks |
| 5. Viva - voce | - |
| 6. 20 Marks | |

REFERENCE BOOKS:

1. Related matter of Charak, Sushrut and Vagbhata and other ancient texts with commentaries
2. Prachin Manovikara Vigyanm - Ayodhya Prasad Achal
3. Ayurvediya Padarth Vigyan - Ranjit Rai Deshai
4. Ayurved Darshan - Acharya Rajkumar Jain
5. Purusha Vichaya - Prof. V.J. Thakkar
6. Ayurvediya Manas Vigyan - Prof. Ram Harsh Singh
7. Yoga evum Ayurved - Acharya Rajkumar Jain
8. Basic principles of Ayurvediya Padartha Vigyan - Dr Yogesh Chandra Mishra
9. Synopsis of Psychiatry - Harold kaplon and Benjamin saddock

10. Oxford textbook of Psychiatry - Michael Gerlder, Paul Harrison

11. General psychology and Abnormal psychology - S.K. Mangal
12. A text book of Post Graduate Psychiatry - Neeraj Ahuja
13. Mind in Ayurveda and other Indian Traditions - A.R.V.Murthy
14. Psychopathology in Indian medicine - Satyapal Gupta
15. Body- Mind-Spirit Integrative Medicine - Prof. Ram Harsh Singh
16. Rationale of Ayurveda Psychiatry - Dr. A.R.V. Murthy
17. Foundations of contemporary **Yoga and Yoga Therapy** - Prof. Ram Harsh Singh
18. Stress and its Management - Dr. K.N. Udupa
19. Concept of Mind - Edited by Prof. C.R. Agnivesh, Kottakkal

20. Kayachikitsa - Part 3 - R. R. Pathak and Vidhyadhar Shukla

21. Panchakarma Illustrated - Prof. Shrinivasa Acharya
22. Unified Dimensions of Ayurvedic Medicine - Dr. J.S. Tripathi
23. Essential Psychiatry - Bhatia MS
24. Sahassrayoga - Nishteswar and Vaidyanath
25. Ayurveda and the Mind - David Frawley
26. Manasa Roga Vijnana - Balakrishna
27. Comprehensive Textbook of Psychiatry - Kaplan and Sadock's
28. Psychiatry for medical students - Robert J Waldinger
29. Introductions to Psychology - Morgan / King.

M.D.-AYURVEDA PRELIMINARY
12.RASAYAN & VAJIKARAN
(Rejuvenation & aphrodisiac)

PAPER-II
PART A

Theory- 100 marks
50 marks

1. Concept of Bhesaja, classification and understanding of Swasthasya Urjaskara and Artasya Roganut.
2. Etymology, derivation, definition, synonyms and scope of Rasayana, Vajikarana & Vrishya.
3. Historical aspects of Rasayana & Vajikarana
4. Rasayana-Vajikarana Arha & Anarha
5. Classification of Rasayana & Vajikarana.
6. Knowledge of Dosha, Dhatu & Mala.
7. Knowledge of Dhatu Parinama & Poshana Nyaya.
8. Detailed knowledge of Shukradhatu, Shukra, Retas, Veerya, Rupadravya, Prashastha Sukra Lakshana, Sukrasaara Purusha.
9. Knowledge of Sukravahasrotas, Sukradhara Kalaa.
10. Concept of Ojas.
11. Knowledge of Prakriti, Sara & Satwa.
12. Knowledge of concept of Agni: all components of Agni, levels of Agnimandya, Agnimandyajanya Vikara.
13. Principles of Panchakarma and application in Rasayana & Vajikarana.

PART B

50 marks

1. Applied anatomical & physiological aspects of male reproductive system.
2. Applied aspects of physiology of puberty.
3. Spermatogenesis.
4. Basics of genetics. Bija and its components.
5. Applied aspects of reproductive endocrinology.
6. Semen formation, knowledge of various components of semen.
7. Basics of applied pharmacology related to Rasayana & Vajikarana.
8. Knowledge of metabolism and metabolic disorders.
9. Basics of Geriatrics.

PRACTICAL

100 marks

Contents:-

1. Daily hospital duties in OPD, IPD and casualty.
2. Assessment of Saara – Shukrasaara and Shukra-Asaara –10 patients.
3. Rasayan and Vajikarana in geriatric patients – 10 patients.
4. Semen analysis- Retopariksha – 10 cases.
5. Uttarbasti – 5 cases.
6. Technique of psychosexual counseling.
7. Applied knowledge of assessment scales pertaining to Vajikarana /sexual functions.
8. Practical aspects of Panchakarma pertaining to Rasayana & Vajikarana.

Distribution of Marks (practical):

1. Case records of patients- (15 case of Rasayana; 10 cases of Vajikarana)	20 marks
2. Bedside clinical case taking- Long case	20 marks
Short case	10 marks
3. Semen analysis and lab investigations	20 marks
4. Instruments and spotting	10 marks
5. Viva voce	20 marks

REFERENCE BOOKS:-

1. Relevant chapters from Brihatrayee and Laghutrayee and their commentaries
2. Panchakarma by Prof.H.S. Kasture
3. Kayachikitsa Vol I & II (Including Panchakarma, Rasayana & Vajikarana) by Prof. RH Singh
4. Illustrative Panchakarma by Dr Sreenivasa Acharya
5. Campbell-Walsh Urology by Alan J. Wein MD PhD (Hon), Louis R. Kavoussi MD, Andrew C. Novick MD, Alan W. Partin MD PhD
6. Clinical Endocrinology 2013 The (Clinical Medicine Series) by MD., CG Weber
7. Sex and Human Loving -Masters and Johnson
8. Diagnosis and treatment of functional Infertility by Lunenfeild B, Insler V, Glezerman M (eds) Black well scientific publications, Berlin.
9. Human reproduction conception and contraception, He fez ESE (ed) Harpar and Row publications, New York
10. Infertility- Practical guide for the physician, Hommond GM, Talbert LM (eds) Black well scientific publications, Oxford
11. Rasayana vajeekarana- Darpan by Om prakash Upadhyaya, Soi Balachandra yantralaya, Manavashram, Jaipur
12. Vatsayana kamasutra
13. Ananga ranga
14. Kelikutuhala
15. Infertility manual by kamini Rao
16. Advanced infertility management- Mehroo Hansotia
17. Endocrine and Reproductive systems – Sanders
18. Proceedings of WHO Symposium on advances in fertility regulation, Moscow: USSR
19. WHO Laboratory Manual for the examination of semen and sperm. Cambridge Uni. Press
20. WHO (1973) Reproductive function in the human male. World Health Organization, Geneva(Mannual)
21. WHO (1975): Scientific group on the epidemiology of infertility. The epidemiology of infertility, Geneva (Technical Report Series No. 5820 37 P)
22. Decision making in infertility; DeCherney AH, Polan ML, Lee RD, Boyers SP (Eds), JP Brothers, New Delhi
23. Handbook of sexual Dysfunction by Richard Balon, R. Taylor Segraves pub. By Taylor and Francis Group Florida
24. The Sperm Cell (Production, Maturation, Fertilization, Regeneration) by Christopher J. De Jonge, Christopher L.R. Barratt, Cambridge University Press
25. Kaplan and Saddocks Synopsis of Psychiatry, Lippincott Williams and Wilkins

M.D.-AYURVEDA PRELIMINARY

13.PANCHKARMA

(Five Therapeutic procedure)

PAPER-II

PART A

Theory- 100 marks

50 marks

1. Chikitsa and its classifications; Antah-Parimarjana and Bahir-Parimarjana Chikitsa
2. Principles of Chikitsa, Kriyakal, Shadvidha and Dvididha Upakrama and role of Panchakarma therein.
3. Applied aspects of Trividha, Shadvidha, Ashta Vidha and Dasha Vidha Pariksha.
4. Applied anatomy and physiology of cortex, cranial and peripheral nerves. Methods of physical examinations of central nervous system: sensory system, motor examination- muscle power and tone, superficial and deep reflexes, difference of upper and lower motor neuron lesions. Tremors and coordination.
5. Functions of various single muscles and groups of muscles, applied anatomy and physiology of joints. Methods of examination of locomotor system. Differential diagnosis of Amavata (rheumatoid arthritis), Vatarakta (gout) and Sandhivata (osteoarthritis). Examination of lumbar and cervical disorders
6. including Gridhrasi (sciatica) and Vishvachi (Brachial neuralgia).
7. Applied anatomy and physiology of cardiovascular and respiratory systems, functions of capillaries and its permeability. Methods of examination of respiratory and cardiovascular system. Interpretation of spirometry and ECG findings.
8. Knowledge and method of examination of various skin lesions.
9. Applied anatomy of stomach, small intestine and large intestine. Detailed examination of gastro-intestinal system.

PART B

50 marks

1. Definition of Karma. Trividha Karma for Shodhana.
2. Importance of Panchakarma in health and disease.
3. Indications and contraindications for Shodhana. Applied aspects of Koshtha and Agni.
4. Importance of Purva and Pashchata Karma in Shodhana. Parihara Vishaya for Panchakarma.
5. Samsarjana Krama. General knowledge of various Aushadha and Ahara Kalpana used for Panchakarma.
6. Areas of research in Panchkarma.
7. Knowledge of equipments and instruments used in Panchkarma in ancient times and the possible modifications therein now.
8. Knowledge of quality standards of NABH (National Accreditation Board of Hospitals) for Ayurveda, guidelines for establishment and management of eco-friendly Panchkarma theatre including management of biomedical waste.

PRACTICAL

100 marks

1. Duty in Panchakarma ward and theatre.
2. Performance of 5 Cases each of Snehana, Svedana, Vamana, Virechana, Basti and Nasya with maintaining of detailed record.
3. Record of detailed examination of 25 patients treated with Panchakarma and effects observed thereon.

Distribution of marks (practical):

- | | |
|--|----------|
| 1. Case records of 25 patients in detail | 20 marks |
| 2. Performance of long Karma | 20 marks |
| 3. Performance of short Karma | 10 marks |
| 4. Panchakarmal procedures | 15 marks |
| 5. Instruments and spotting | 15 marks |
| 6. Viva voce | 20 marks |

REFERENCE BOOKS:

1. Charak Samhita with commentary of Ayurved Dipika by Chakrapanidatta and Jalpakalpa taruby Gangadhara
2. Sushrutha Samhita with the Nibhandha Samgraha commentary of Dalhana and Nyayachandrika panjika of Gayadasa on nidansthana
3. Ashtang Hridaya with Sarvanga sundara and Ayurved rasayana commentaries
4. Ashtanga Sangraha with Shashilekha commentery
5. Bhela Samhita
6. Kashyapa Samhita
7. Bhavaprakasha of Bhavamishra
8. Sharangadhara Samhita
9. Vangasen
10. Gadanigraha
11. Ayurvediya Panchkarma chikitsa Dr Mukundilal Dwivedi
12. Panchkarma Vigyan Dr Haridas Shreedhar Kasture
13. Illustrated Panchkarma Dr.G Srinivasa Acharya
14. Ayurveda-Principles and Practice of Panchakarma Dr. Mandip and Dr Gurdip Singh
15. The Panchkarma Treatment of Ayurved With Kerala Specialities Dr. T.L. Devaraj
16. Panchkarma Therapy Dr. R.H. Singh
17. Principles and practice of vasti Dr. Vasudevan Nampoothiri and Dr. L. Mahadevan
18. Claiton's Physiotherapy
19. Teddy's Physiotherapy
20. Guyton's Physiology
21. Harrison's Principles of Internal Medicines

M.S.-AYURVEDA PRELIMINARY
14. PRASUTI AVUM STRI ROGA
(Gynecology & obstetrics)

PAPER-II
PART A

Theory- 100 marks
50 marks

1. Concept of Tridosha, Dhatu, Upadhatu, Agni, Pancha Mahabhuta in relation to Prasuti and Stri Roga.
2. Concept of Artava and Shukra.
3. Concept of Rasa, Guna, Veerya, Vipak and Karma of Dravya used in Prasuti and Stri Roga.
4. Action and adverse drug reaction related to commonly used plants and Rasa Aushadhi in Prasuti and Stri Roga.
5. Concept of Pathya- Apathya in relation to Prasuti and Stri Roga.
6. Concept of Garbhadhan and Garbha.
7. Concept of Vrana and Vrana dushti.
8. Concept of special therapies of Ayurved used in Prasuti and Stri Roga.
9. Concept of Ashtavidha Shastra Karma, Yantra & shastra used in Prasuti and Stri Roga

PRACTICAL

100 marks

1. Applied anatomy and physiology of genito-urinary system, abdomen, pelvis, pelvic floor, anterior abdominal wall, inguinal ligament, inguinal canal, vulva, rectum and anal canal.
2. Abnormal development, structure and function of female and male urogenital systems
3. Development, structure and function of placenta, umbilical cord and amniotic fluid.
4. Physiological and neuro-endocrinal changes during puberty, adolescence and menstruation.
5. Introduction of hormones related with gynaecology and obstetrics. Ovulation, fertilization, climacteric and menopause. Biophysical and biochemical changes in uterus and cervix during pregnancy and labour.
6. Pre-natal, Natal and Post natal counseling and examination.
7. Pharmacological study of drugs used in gynaecology and obstetrics.
8. Knowledge of diagnostic techniques used in gynaecology and obstetrics.
9. Basic Knowledge of pathological and biochemical investigation used in gynaecology and obstetrics.
10. Ethics, law and Acts Related to gynaecology and obstetrics – laws of abortion and adoption.
11. Knowledge of contraception and sterilization procedures.
12. Pre-operative and post operative care in gynaecology and obstetrics.

PRACTICAL

100 marks

Contents:

1. Hospital duties in OPD, IPD, labor room, OT and casualty
2. History taking and counseling - 25 cases.
3. Labor cases - observation/performing - 10 cases
4. Knowledge of instruments required in gynecology and obstetrics practices.
5. Ayurvedic diagnostic and therapeutic procedures.
6. Fluid therapy and blood transfusion.
7. Contraception and sterilizations.
8. Pre-operative, operative and post operative procedures.

Distribution of marks (Practical)

- | | |
|--|------------|
| 1. Case records of Patients in Detail (25 Cases) | - 20 Marks |
| 2. Bedside clinical case taking | |
| Long case | - 20 Marks |
| Short case | - 10 Marks |
| 3. Procedures | - 15 Marks |
| 4. Identification of instruments, X-ray etc & Spotting | - 15 Marks |
| 5. Viva - voce | - 20 Marks |

REFERENCE BOOKS:

- | | |
|---|---------------------|
| 1. Related matter from all the samhitas and their commentaries. | |
| 2. Prasuti tantra evum stree roga by | prof Tewari P V |
| 3. Concepts of gynecology | Dr Nirmala G Joshi. |
| 4. Prasuti Tantra | Prof. M. Dwivedi |
| 5. Stree roga vigyan - | Dr VNK Usha |
| 6. Navya prasuti Vigyan | Dr Pooja Bharadwaja |
| 7. Text book of gynaecology- | Berek and Novak. |
| 8. Text book of obstetrics- | Williams |
| 9. Text book of obstetrics- | D C Dutta |
| 10. Text book of gynaecology - | D C Dutta |
| 11. Gabbe's normal and problem pregnancies. | |
| 12. Human embryology by | Saddler. |
| 13. Jeffcoat's principles of gynaecology | |
| 14. Te linde's gynaecological surgery. | |

M.D.-AYURVEDA PRELIMINARY
15. KAUMARBHRITYA - BALA ROGA
(Pediatrics)

PAPER-II
PART A

Theory- 100 marks
50 marks

1. Development of Kaumarbhritya tantra including ancient and modern literature. Strength of Ayurveda specific to child health care.
2. Vayobheda (Classification of age) according to different classics
3. Anatomical and physiological differences in child compared to adult.
4. Ayurvedic consideration of physiology and pathology of Dosha, Dhatu, Mala, Oja, Agni, Prakriti (sharirika-manasika), Kaya and Dhatuposhana in children.
5. Basic Concepts of growth and development, and its assessment.
6. Ayurvedic and modern clinical methods of examination of healthy and diseased newborn and children.
7. Knowledge of modern diagnostic tools like clinical and laboratory investigations, X-ray, USG, MRI etc.
8. Fundamentals of Ayurvedic treatment for childhood disorders.
9. Applied pharmacological considerations: Ayurvedic and modern concepts of drug doses, administration, distribution, metabolism, excretion, and other important factors of consideration.
10. National programs related to pediatrics.
11. Childhood Samskara
12. Principles of Child Psychology (Ayurvedic & modern concepts)

PART B

50 marks

1. Concept of Bala Rasayana and its application in physical and mental health of children.
2. Concept of Vyadhi-Kshamatva avam Vardhanopaya. Concept of immunity and immune enhancing measures including immunization.
3. Concept of Dhupana and Raksha karma and their clinical application in pediatric practice
4. Basic concepts of single drugs commonly used in pediatric practice with special reference to their karma like- Guduchi, Yastimadhu, Mandukaparni, Shankhapushpi, Ativisha, Pippali, Maricha, Shunti, Haritaki, Amalaki, Tulasi, Bhumyamalaki, Daruharidra, Haridra, Vidanga, Katuki, Dadima, Brahmi, Ashvagandha, Shatavari, Bala, Kampillaka, Trivrita, Jyotishmati, Vacha, Jeevanti, Rasna, Shatavari, Anantamula (Krishna Sariva), Durva, Khadir, Tankana, Tambula, Jatamansi, Sphatika.
5. Knowledge of their ingredients, indications, precautions and specific considerations including adverse drug reactions (ADR) of commonly used Ayurvedic formulations in pediatric practice e.g. Aravindasava, Baalachaturbhadra Churna, Kumarakalyana Rasa, Saraswatarista, Swarnaprashana (Kashyapa Samhita), Kumaryasava, Kushmanda Rasayana (Sharangdhar), Ashvagandha Rasayana (Ashtanga Hridaya), Brahmi Ghrita, Kalyanaka Ghrita, Talishadi Churna, Sitopaladi Churna, Haridra Khanda, Krimikuthara Rasa, Mugdha Rasa, Dantodbheda-Gadantaka Rasa, Rajanyadi Churna (Ashtanga Hridaya), Samvardhana Ghrita, Ashta Mangal Ghrita.
6. Methods of preparation of various specific Kalpana (e.g. Lehya, Syrup, drops etc.) according to needs of children.
7. Common instruments and their application in new born care and general pediatric practice.
8. Specific considerations in research methods related to Pediatrics.
9. Regulatory laws related to child health management

PRACTICAL

100 marks

Contents:

1. a) In-patient case history record - (25 Patient)
- b) Child Health record - (50 Case)
2. Involvement in Outreach and National programs:
 - a. School Child health checkup
 - b. Adolescent education
 - c. Adolescent counseling etc
3. Pediatric ward/nursery management.

Distribution of marks (Practical)

1. a) Case History Record - (25 Patient) - 10 Marks
- b) Child Health record - (50 Case) - 10 Marks
2. Bed side clinical case taking
 - a. Long Case - 20 Marks
 - b. Short Case - 10 Marks
3. Procedures/ Kriya Kalpa - 15 Marks
4. Identification of instruments & Spotting - 15 Marks
5. Viva-voce - 20 Marks

REFERENCE BOOKS:

1. Kashyapa Samhita Complete Hindi translation by Satyapal Vidhyalankara English translation by Prof. Premvati Tiwari
2. Principles & practice of Pediatrics in Ayurveda: CHS Shastry
3. Child Health Care in Ayurveda: Abhimanyu Kumar
4. Ayurvedic Concepts of human Embryology: Abhimanyu Kumar
5. Kaumarbhritya by Prof. D.N. Mishra
6. Kaumarbhritya Ke Antargata Balgraho Ka Kramika Evam Vaigyanika Adhyana by Prof. Chanchal Sharma
7. Notes on Kaumarbhritya-by Dr. Dinesh K S
8. Pran - Pratyagamanam-by Dr. B.M. Singh
9. Ayurveda Dwara Matra Evam Shishu Paricharya by Dr. KS Patel, V.K. Kori & Rajgopal S.
10. Kaumarbhritya related references from Charaka Samhita, Sushruta Samhita Vagbhata etc.
11. Clinical Methods in Paediatrics by Meharban Singh
12. Pediatrics Emergencies by Meharban Singh
13. Essential Pediatrics O.P. Ghai
14. Text Book of Pediatrics Nelson
15. Care of New Born by Meharban Singh

M.S.-AYURVEDA PRELIMINARY
16.SHALYA TANTRA – SAMANYA
(General Surgery)

PAPER-II
PART A

Theory- 100 marks
50 marks

1. Etymology and definition of Shalya Tantra.
2. Scope and importance of Shalya Tantra.
3. Study of Sushruta Samhita Sutra Sthana.
4. Study of modern surgical clinical methodology.
5. Applied anatomy, physiology and surgical pathology of common surgical conditions including relevant Ayurvedic aspect.
6. Applicability of Shat Kriyakala in the pathogenesis of surgical diseases.
7. Applicability of Prakriti in understanding the causes and role of treatment in surgical diseases.
8. Applicability of basic principles of Ayurveda in Rogi Pariksha (Trividha, Shadvidha, Ashtavidha and Dashavidha Pariksha) and latest investigations.
9. Concept of Rakta according to Sushruta.
10. Introduction of clinical and diagnostic methods in Shalya Tantra - X-rays, U.S.G., Endoscopies (for diagnostic and treatment purposes), MRI, CAT scanning and other recent diagnostic tools.
11. Concept and applicability of Sadhya-Asadhya (Prognosis) - Arishtha lakshana.
12. Knowledge of life saving drugs.
13. Emergency conditions and its management.
14. Diagnosis and management of Pranashtha Shalya.

PART B

50 marks

- Yantra and Shastra – Surgical Instruments - Ancient and recent advances.
- Sterilization – methods and types.
- Basic knowledge of Sangyahan – Anaesthesia - Types, methods, indications, contraindications, complications and its management.
- Concept of Trividha Karma – Purva, Pradhana and Pashchat.
- Ashtavidha Shastra Karmas.
- Bandhana Karma – Ancient and recent advances.
- Kshara Karma – Introduction, types, method of various preparations like Kshara, Kshara Varti, Kshara Pichu and applications.
- Kshara Sutra – Method of preparation, standardization and applications.
- Agnikarma – Introduction, types and applications.
- Raktamokshana – Introduction, types and applications.
- Application of Panchakarma therapy in surgical practice.
- Scope of Pathya-Apathya in the management of surgical diseases.

PRACTICAL

100 marks

Content:-

1. Hospital duties in OPD, IPD, OT and casualty
2. Case record – 25 cases
3. Surgical cases - observation/performing- 10 cases
4. Knowledge of instruments required in surgical practices.
5. Ayurvedic diagnostic and therapeutic procedures.
6. Fluid therapy and blood transfusion.
7. Contraception and sterilizations.
8. Pre-operative, operative and post operative procedures.

Distribution of marks (practical):

1. Case records of 25 Patients in detail	20 marks
2. Bedside clinical case taking-	
Long case	20 marks
Short case	10 marks
3. Identification of instruments, X-ray etc	15 marks
4. Medical procedures	15 marks
5. Viva voce	20 marks

REFERENCE BOOKS:-

1. Sushruta Samhita
2. Ashtanga Sangraha
3. Ashtanga Hridaya
4. Charaka Samhita
5. The Surgical instruments of the Hindus - Girindranath Mukhopadhyaya
6. Shalya Tantra Samuchchaya - Pandit Ramadesh Sharma
7. Shalya Vigyan (Part 1-2) - Dr. Surendra Kumar Sharma
8. Shalya Samanvaya (Part 1-2) - Vd. Anantaram Sharma
9. Shalya Pradeepika - Dr. Mukund Swaroop Verma
10. Sushruti - Dr. Ram Nath Dwivedi
11. Clinical Shalya Vigyan - Dr. Akhilanand Sharma
12. Bhagna Chikitsa - Dr. Prabhakar Janardhan Deshpande
13. Kshara sutra management in anorectal ailments - Dr. S.K. Sharma, Dr. K.R.Sharma and Dr. Kulwant Singh.
14. Anorectal diseases in Ayurveda - Dr. Sizoria and Dr. Praveen Kumar Chowdary.
15. Adhunka Shalya Chikitsa Siddanta - Dr. Katil Narshingham Udupa
16. Agnikarma Technology Innovation - Dr. P.D. Gupta
17. Shalya Tantra Ke Siddhant - Dr. K.K.Takral
18. Recent advances in the management of Arshas /Haemorrhoids - Dr. P. Hemantha Kumar
19. Arsha Evum Bhagander Mein sutra Avacharan- Vd. Kanak Prasad Vyas
20. Recent advances in Kshara Sutra - Dr. M. Bhaskar Rao
21. Leech application in Ayurveda - Dr. M. Bhaskar Rao
22. Kshara Sutra - Dr. S.N.Pathak
23. Shalya Shalaky Tantra - Vd. S.G. Joshi
24. Surgical ethics of Ayurveda - Dr. D.N. Pande
25. Text book of Surgery - Sabistan
26. Operative Surgery - Rob and smith
27. Bailey and Love's Short Practice of Surgery - Norman.S. Williams, Charles.V. Mann and R.C.G. Russell
28. Fractures and Joint Injuries - Watson-Jones
29. Text books of Operative Surgery - Farquharsons'
30. Principles of Surgery - Schwartz
31. Emergency Surgery - Hamilton Bailey's
32. Surgical pathology - Willing Worth
33. Clinical methods in surgery - S. Das
34. Textbook of Operative Surgery - S. Das
35. Shalya Vigyan (Sachitra) - Anantram Sharma

- | | |
|---|--|
| 36. Anushastra Karma | - Dr. D.N. Pande |
| 37. Concept of Vrana is Ayurveda | - Dr. Lakshman Singh |
| 38. Significance for Poorva Karma in Surgical Patient | - Dr. Lakshman Singh |
| 39. Sangyahan Prakash | - Dr. D.N. Pande |
| 40. A concise Text Book of Surgery | - S. Das |
| 41. A manual on Clinical Surgery | - S. Das |
| 42. A System of Surgical Diagnosis | -T.N. Patel |
| 43. A Practical Guide to Operative Surgery | - S. Das |
| 44. Drugs and Equipment for Anaesthesia | - Arun kumar |
| 45. Manual of Surgical Instruments | - M.M. Kapur |
| 46. Ward Procedures | - Patel Mansukh. B |
| 47. Recent trends in the management of
Arshas / Haemorrhoids | - Dr. P. Hemantha Kumar |
| 48. Primary Anaesthesia | - Maurice King |
| 49. Synopsis of Anaesthesia | - Lee |
| 50. Clinical Anatomy/ Surgical Anatomy | - John E.Skandalakis |
| 51. Surgical Instruments of the Hindus | - Girindharnath Mukopadyay |
| 52. Outline of Orthopedics | - John Crawford Adams and David
Hamblen. L |
| 53. Outline of Fracture | - John Crawford Adams |
| 54. Recent trends in the management of
Bhagandara / Fistula-in-ano | - Dr. P. Hemantha Kumar |
| 55. Principles and Practice of Agnikarma | - Dr. Anand Kumar and Dr. Kanchan
Shekokar. |
| 56. Manipal Manual of Surgery | - Dr. Rajgopal Shenoy |

M.S.-AYURVEDA PRELIMINARY
17.SHALYA - KSHARA KARMA AVUM ANUSHAstra KARMA
(Para Surgical Procedure including Minimal invasive Surgery)

PAPER-II

Theory- 100 marks

PART A

50 marks

1. Etymology and definition of Shalya Tantra.
2. Scope and Importance of Shalya Tantra.
3. Study of Sushrut Samhita Sutra Sthana 1- 46 chapters.
4. Study of modern surgical clinical methodology.
5. Applied anatomy, physiology and surgical pathology of common surgical conditions including relevant Ayurvedic aspect.
6. Applicability of Shat Kriyakala in the pathogenesis of surgical diseases.
7. Applicability of Prakriti in understanding the causes and role of treatment in surgical diseases.
8. Applicability of basic principles of Ayurveda in Rogi Pariksha (Trividha, Shadvidha, Ashtavidha and Dashavidha Pariksha) and latest investigations.
9. Concept of Rakta according to Sushruta.
10. Introduction of clinical and diagnostic methods in Shalya Tantra - X-rays, U.S.G., Endoscopies (for diagnostic and treatment purposes), MRI, CAT scanning and other recent diagnostic tools.
11. Concept and applicability of Sadhya-Asadhya- Prognosis – Arishtha Lakshana.
12. Knowledge of life saving drugs.
13. Emergency conditions and its management.
14. Diagnosis and management of Pranastha Shalya.

PART B

50 marks

1. Yantra and Shastra – Surgical Instruments - Ancient and recent advances.
2. Sterilization – methods and types.
3. Basic knowledge of Sangyaharn – Anaesthesia - Types, methods, indications, contraindications, complications and its management.
4. Concept of Trividha Karma – Purva, Pradhana and Pashchat.
5. Ashtavidha Shastra Karmas.
6. Bandhana Karma – Ancient and recent advances.
7. Kshara Karma – Introduction, types, method of various preparations like Kshara, Kshara Varti, Kshara Pichu and applications.
8. Kshara Sutra – Method of preparation, standardization and applications.
9. Agnikarma – Introduction, types and applications.
10. Raktamokshana – Introduction, types and applications.
11. Application of Panchakarma therapy in surgical practice.
12. Scope of Pathya-Apathya in the management of surgical diseases.

PRACTICAL

100 marks

Content :-

1. Hospital duties in OPD, IPD, OT and casualty
2. Case record – 25 cases
3. Parasurgical cases - observation/performing- 10 cases
4. Knowledge of instruments required in parasurgical practices.
5. Ayurvedic diagnostic and therapeutic procedures.
6. Fluid therapy and blood transfusion.
7. Pre-operative, operative and post operative procedures.

Distribution of marks (practical):

1. Case records of 25 Patients in detail	20 marks
2. Bedside clinical case taking-	
Long case	20 marks
Short case	10 marks
3. Identification of instruments, X-ray etc.	15 marks
4. Medical procedures	15 marks
5. Viva voce	20 marks

REFERENCE BOOKS :-

1. Sushruta Samhita
2. Ashtanga Sangraha
3. Ashtanga Hridaya
4. Charaka Samhita
5. The Surgical instruments of the Hindus - Girindranath Mukhopadhyaya
6. Shalya Tantra Samuchchaya - Pandit Ramadesh Sharma
7. Shalya Vigyan (Part 1-2) - Dr. Surendra Kumar Sharma
8. Shalya Samanvaya (Part 1-2) - Vd. Anantaram Sharma
9. Shalya Pradeepika - Dr. Mukund Swaroop Verma
10. Sushruti - Dr. Ram Nath Dwivedi
11. Clinical Shalya Vigyan - Dr. Akhilanand Sharma
12. Bhagna Chikitsa - Dr. Prabhakar Janardhan Deshpande
13. Kshara sutra management in anorectal ailments - Dr. S.K. Sharma, Dr. K.R.Sharma and Dr. Kulwant Singh.
14. Anorectal diseases in Ayurveda - Dr. Sizoria and Dr. Praveen Kumar Chowdary.
15. Adhunik Shalya Chikitsa Siddanta - Dr. Katil Narshingham Udupa
16. Agnikarma Technology Innovation - Dr. P.D. Gupta
17. Shalya Tantra Ke Siddhant -Dr. K.K.Takral
18. Recent advances in the management of - Dr. P. Hemantha Kumar
19. Arshas / Haemorrhoids
20. Arsha Evum Bhagander Mein sutra Avacharan -Vd. Kanak Prasad Vyas
21. Recent advances in Kshara Sutra - Dr. M. Bhaskar Rao
22. Leech application in Ayurveda - Dr. M. Bhaskar Rao
23. Kshara Sutra - Dr. S.N.Pathak
24. Shalya Shalaky Tantra -Vd. S.G. Joshi
25. Surgical ethics of Ayurveda -Dr. D.N. Pande

- | | |
|---|--|
| 26. Text book of Surgery | - Sabistan |
| 27. Operative Surgery | - Rob and smith |
| 28. Bailey and Love's Short Practice of Surgery | - Norman.S. Williams, Charles.V. Mann and R.C.G. Russell |
| 29. Fractures and Joint Injuries | - Watson-Jones |
| 30. Text books of Operative Surgery | - Farquharsons' |
| 31. Principles of Surgery | - Schwartz |
| 32. Emergency Surgery | - Hamilton Bailey's |
| 33. Surgical pathology | - Willing Worth |
| 34. Clinical methods in surgery | - S. Das |
| 35. Textbook of Operative Surgery | - S. Das |
| 36. Shalya Vigyan (Sachitra) | - Anantram Sharma |
| 37. Anushastra Karma | - Dr. D.N. Pande |
| 38. Concept of Vrana is Ayurveda | - Dr. Lakshman Singh |
| 39. Significance for Poorva Karma in Surgical Patient | - Dr. Lakshman Singh |
| 40. Sangyahan Prakash | - Dr. D.N. Pande |
| 41. A concise Text Book of Surgery | - S. Das |
| 42. A manual on Clinical Surgery | - S. Das |
| 43. A System of Surgical Diagnosis | - T.N. Patel |
| 44. A Practical Guide to Operative Surgery | - S. Das |
| 45. Drugs and Equipment for Anaesthesia | - Arun kumar |
| 46. Manual of Surgical Instruments | - M.M. Kapur |
| 47. Ward Procedures | - Patel Mansukh. B |
| 48. Recent trends in the management of | - Dr. P. Hemantha Kumar |
| 49. Arshas / Haemorrhoids | |
| 50. Primary Anaesthesia | - Maurice King |
| 51. Synopsis of Anaesthesia | - Lee |
| 52. Clinical Anatomy/ Surgical Anatomy | - John E.Skandalakis |
| 53. Surgical Instruments of the Hindus | - Girindharnath Mukopadyay |
| 54. Outline of Orthopedics | - John Crawford Adams and David Hamblen. L |
| 55. Outline of Fracture | - John Crawford Adams |
| 56. Recent trends in the management of | - Dr. P. Hemantha Kumar |
| 57. Bhagandara / Fistula-in-ano | |
| 58. Principles and Practice of Agnikarma | - Dr. Anand Kumar and |
| 59. Dr. Kanchan Shekoker. | |
| 60. Manipal Manual of Surgery | - Dr. Rajgopal Shenoy |

M.S.-AYURVEDA PRELIMINARY
18.ASTHI SANDHI AND MARMAGAT ROGA
(Orthopedics and management of vital points)

PAPER II

PART A

Theory- 100 marks
50 marks

1. Etymology and definition of Shalya and Shalya Tantra. Scope and importance of Shalya Tantra.
2. Dosha, Dhatu, Mala and Sarotas vigyan.
3. Knowledge of ancient and recent Yantra and Shastra – Surgical instruments. Ashtavidha Shastra Karma and their application in surgical practice.
4. Trividha Karma – Purva, Pradhan and Pashchat Karma. Modern principles of pre-operative and post-operative care. Clinical application of Purva and Pashchat Karma in modern surgery.
5. Asepsis and Antiseptis. Sterilisation (Nirjantukikarana)-methods and types. O.T. Fumigation.
6. Surgical infections – Sepsis, Cellulitis, Erysepelas, Tetanus, Gas gangrene, Hepatitis, HIV-AIDS etc. Handling and care of HIV and Hepatitis positive patients. Knowledge of conditions like Bacteraemia, Septicaemia, Toxaemia and Pyaemia
7. Concept of Shock - Its varieties etiopathogenesis and management – Cardio-pulmonary resuscitation (CPR), Endo-tracheal intubation and Tracheostomy.
8. Drug reactions and Anaphylaxis – Management.
9. Sushruta's concept of Rakta and Raktasrava – Haemorrhage – Types, Patho-physiology, clinical features and management. Concept of Raktastambhana – Haemostasis. Blood transfusion – Indications, blood groups, components, compatibility and complications with management.
10. Shatkriyakaala and its applicability in the pathogenesis of surgical diseases.
11. Knowledge of Prakriti and its impact on pathogenesis, clinical features and treatment of orthopedic diseases.
12. Rogi and Rog Pariksha (Trividha, Shadvidha, Ashtavidha and Dashavidha Pariksha) and its application in the diagnosis of diseases.
13. Vranashopha and Inflammation, Nadvrana and Sinuses / Fistulae, Vidradhi and abscesses.
14. Swellings – Arbuda and Tumours, Granthi and Cysts.
15. Anu Shastra Karma like Ksharakarma, Agnikarma, Raktavasechana etc. and their application in orthopedic practice.
16. Pranashta Shalya Vigyan.
17. Fluid, Electrolyte, Acid Base Balance and Nutrition
 1. Introduction to physiology of fluids and electrolytes.
 2. Dehydration and over hydration.
 3. Specific electrolyte losses, symptomatology and management of Acidosis, Alkalosis and Acid-Base balance.
 4. Various replacement fluids in surgery, mode of administration and complications.
 5. Nutrition – pre-operative, peri-operative and post-operative.
 6. Intravenous fluid therapy.
18. Knowledge of imaging and diagnostic techniques – X-ray, Ultra Sonography, CT scan, MRI and recent advances.

PART B

50 marks

1. Scope of Asthi Sandhi evam Marmaghata Roga specialty and its importance. Historical aspect of Ayurvedic and modern orthopedics and Marma.
2. Marma Sharira – Etymological derivation, definition, basic concept of Marma, origin, classification, Pramana. Consequences of Marmaghata and their management.
3. Vrana Vigyan – Etiology, classification, symptomatology, prognosis and management principles of Nija and Sadyo Vrana. Concept of Shashti Upakrama. Seevana and Suturing, Vrana Bandhana and Bandaging. Modern concept of Wounds and Ulcers, their classification and management principles. Recent wound closure techniques, suture materials, dressing, bandaging materials and techniques. Mechanism of wound healing.
4. Bhagna - Etiology, classification, general management principles, complications and prognosis of the skeletal injuries according to Ayurved and Modern aspect. Mechanism of bone healing.
5. Itrathadagdha and Burns - Etiology, classification, symptomatology, prognosis and management principles. Knowledge of Burns Shock, its prevention and management principles.
6. Principles of initial care of injured person. Handling of poly trauma patient. ARDS (Acute Respiratory Distress Syndrome), Crush Syndrome, Thromboembolism, Fat Embolism syndrome and their management.
7. Systemic response to injury.
8. Pharmacology of emergency drugs, antibiotics, NSAIDs, Opiates, central muscle relaxants.
9. Anesthesiology related to Orthopedics. Pharmacology of local anesthetics and vasoconstrictors. Knowledge of local anesthesia techniques like local anesthetic infiltration, various blocks (e.g. ring block, nerve block, plexus block, field block, hematoma block, costal block etc.) Spinal and epidural blocks.
10. Medico-legal aspects in orthopedics. Knowledge of documentation and record keeping.

PRACTICAL

100 marks

Contents:

- Clinical history taking and examination of orthopedic patient.
- Knowledge of diagnostic and therapeutic principles of Shalya Tantra.
- Identification and functioning of surgical and orthopedic instruments.
- Practical knowledge of documentation and record keeping.
- Practical knowledge of Anu-Shastra Karma.
- Practical Knowledge of Seevan Karma and suturing and Vrana Bandhana and bandaging.
- Knowledge about the management of orthopedic emergencies.
- Knowledge of Purva Karma and Pashchat Karma.
- Practical knowledge of sterilization and OT fumigation.
- Knowledge of handling of medico legal cases and issuing MLCs and other certificates.

Distribution of Marks (practical):

- | | |
|---|----------|
| 1. Case Records (25 cases) | 20marks |
| 2. Bed Side examination- | |
| ▪ Patient History (Long case) | 20 marks |
| ▪ Patient History (Short case) | 10 marks |
| 3. Instruments / equipments / models identification | 15 marks |
| 4. Medical procedures | 15 marks |
| 5. Viva Voce | 20 marks |

REFERENCE BOOKS:-

Sushruta Samhita	Relevant parts
Sushruta Samhita (Dalhana commentary)	Relevant parts
Charak samhita	Relevant parts
Ashtang Hridaya	Relevant parts
Ashtang Sangraha	Relevant parts
Saushruti	Ramanath Dwivedi
Watson and Jones – Fracture and Joint Injuries	J.N. Wilson
Practical Fracture Treatment	R. McRae
Clinical Orthopedic Examination	R. McRae
Apley’s System of Orthopedics	Apley Louis Solomon
A Concise Text Book of Surgery	S. Das
Pye’s Surgical Handicraft	
Clinical Methods in Surgery	Sriram Bhatt
Clinical Methods in Surgery	S. Das
Operative Surgery	S. Das
Schwartz Principles of Surgery	
Bailey and Love’s short practice of Surgery	

M.D.-AYURVEDA PRELIMINARY

19. SANGYAHARAN

(Anesthesiology)

PAPER-II

PART-A

Theory 100 marks

50 marks

1. Shisyopanayana, Vishikhanupravesha, Agropaharaniya and Shatkriyakala.
2. Etymology and definition of Sangyaharan and its scope, application and importance in surgical practice.
3. Fundamentals of Ayurveda in relation to Sangyaharan- Panchmahabhuta, Prakriti, Dosha, Dhatu and Mala.
4. Concept of Vedana (pain), pathophysiology and modalities of pain management in Ayurveda.
5. Agni Karma in pain management.
6. Introduction, fundamentals, importance, types, methods of application, duration, instruments, equipments and various materials used for Agni Karma. The indications, contraindications, complications of Agni karma and their management.
7. Raktamokshana (blood letting) in pain management.
8. Introduction, fundamentals, importance, types, methods of application, duration, instruments, equipments and various materials used for Raktamokshana. Indications, contraindications, complications of Raktamokshana and their management.
9. Causes of vitiation of Rakta Dosha and Rakta Dushtijanya Vikaras.
10. Types of Raktamokshana and determination of appropriate amount of blood loss during Raktamokshana according to diseases and patients.
11. Methods of Raktastambhana.
12. Leech Therapy in pain management. Varieties, importance, methods of applications, indications, contraindications, complications and their management and method of maintenance of leeches.
13. Trividha Karma - Purva karma (preanaesthetic management), Pradhana karma(induction and maintenance) and Pashchat Karma (post anesthetic care).
14. Concept of Marma, their importance and application in Sangyaharan.
15. Concept of palliative care and its role in terminally ill patient care in Ayurveda.

PART-B

50 marks

History of Anesthesia.

1. Molecular basis of anesthesia, cell physiology and body fluids.
2. Respiratory system: Anatomy of the upper airway - nose, pharynx, larynx, tracheobronchial segment, mechanics of respiration, physiology of respiration, ventilation, perfusion matching, lung volumes and capacities, pulmonary gas exchange and transport of gases, lung function tests - including laboratory tests for obstructive and restrictive lung diseases.
3. Cardiovascular system: Anatomy and physiology of heart and autonomic nervous system, maintenance of blood pressure, systemic circulation, pulmonary circulation, microcirculation and lymphatics.
4. Nervous system: Anatomy and physiology of central nervous system, cranial nerves, nerve plexuses, spinal column. Physiology of sleep, sleep disorders, physiology of pain, physiology of neuromuscular junction, autonomic nervous system - sympathetic and parasympathetic.
5. Endocrinology as related to anesthesia: Function of anterior and posterior pituitary and their dysfunction, hyper and hypothyroidism, hyper and hypopara-thyroidism, diabetes mellitus - hypo and hyperglycemia, ketoacidosis. Adrenal cortex and medulla functions and disorders.

6. Pathophysiology of renal failure, renal function tests.
7. Pathophysiology of hepatic failure, liver function tests.
8. Shock and its management.
9. Fluid and electrolyte, acid base balance, ABG interpretation and water intoxication
10. Thermoregulation.
11. Pre anesthetic assessment and permedication.
12. Physics applied to anesthesia: Gas laws, ventilators & monitors, flow meters, vaporizers, breathing systems, carbon-dioxide absorbers, medical gas supply, suction machines, electrical fire & explosion hazards, pollution in O.T.
13. Sepsis, asepsis and sterilization- methods, types of sterilization of machine and equipments with special reference to tetanus, hepatitis, HIV-AIDS etc. O.T. fumigation.
14. Intravenous fluids, crystalloid & colloids, their indications, contra indications, complications and their management.
15. Blood transfusion-indication, contra indications, complications and their management, component therapy.
16. Medicolegal and ethical aspects in research and patient care. Medico legal issues, understanding the implications of acts of omission and profession, National Health policy - implications in a medico legal case like accidents, negligence, assaults etc.
17. Anaesthesia documentation and record keeping.

PRACTICAL

100 marks

Contents:

1. Anesthetic Drugs.
2. Demonstration of induction of Anesthesia.
3. Preanaesthetic assessment of patients.
4. Post anesthesia management.
5. Complications of anesthesia and their management.
6. Identification of instruments and knowledge of their use.

Distribution of marks (Practical)

- | | |
|--|------------|
| 1. Anesthesia documentation & record keeping | - 20 Marks |
| 2. Bedside clinical case taking | |
| 3. Long Case | - 20 Marks |
| 4. Short Case | - 10 Marks |
| 5. Procedure | - 15 Marks |
| 6. Identification of instruments & Spotting | - 15 Marks |
| 7. Viva-voce | - 20 Marks |

REFERENCE BOOKS

- | | |
|---|----------------------|
| 1. Sushruta Samhita | |
| 2. Charka samhita | |
| 3. Ashtang Hridaya | |
| 4. Practice of Anesthesia | - Churchill Davidson |
| 5. Miller's Anesthesia | - Ronald D Miller |
| 6. Synopsis of Anesthesia | - Alfred Lee |
| 7. Sangyahan Prakash | - Dr. D. N. Pande |
| 8. Agni karma-Technological Innovation | - Dr. P.D. Gupta |
| 9. Practice of Anesthesia and Resuscitation | - Dr. P.K. Guptaetal |
| 10. Essentials of Anesthesiology | - Prof. A.K. Paul |
| 11. Clinical Anesthesia | - Prof. A.K. Paul |
| 12. Anu Shastra karma | - Dr. D.N. Pande |
| 13. Textbook of Anesthesia | - Aitkenhead |
| 14. Anesthesia and co-existing disease | - Stoelting's |

M.S.-AYURVEDA PRELIMINARY
20. SHALAKYA - NETRA ROGA
(Ophthalmology)

PAPER-II
PART-A

Theory- 100 marks
50 marks

1. Shalakya Tantra Parichaya, Itihas and Pradhanyam.
2. Netra Sharir and related Marmas
3. Study of Dosha, Dhatu, Mala and Srotas in context to Netra chikitsa.
4. Updated knowledge of Agropaharaniya in Netra chikitsa- incorporating sterilization, Sangyahaarana (Anaesthesia).
5. Basic pharmacology of common drugs required in ocular diagnostic and therapeutic procedures.
6. Vrana Siddhanta-Trividha Shopha, Shuddha-Ashuddha Vrana, Vrana Srava, Vrana Bandha, Vranitopasana in context to Netra chikitsa.
7. Swasthavritta related to Netra.
8. Chaturvidha Chikitsa Siddhanta and Raktamokshana in Netra chikitsa.
9. Applied knowledge of various Kriyakalpas and other therapeutic procedures related to Netra chikitsa.
10. Role of Panchkarma in Netra chikitsa.
11. Netra Chikitsa Upayogi Vishishta Yoganam, Guna, Karma prayog gyanam of most common classical Yogas.

PART-B

50 marks

- Applied anatomy and physiology of eye, its adnexa and visual pathway.
- Clinical methods of eye examination.
- Application of various aids and techniques in the examination of eye viz Tonometry, direct Ophthalmoscopy, Perimetry, Refraction and Slit Lamp examination with their interpretation.
- Fundamentals of optics and refraction.
- Applied aspects of Aetio-Pathogenesis, clinical features, prognostic and therapeutic principles in Netra Roga Chikitsa along with Pathya-Apathya and their contemporary knowledge.
- Common ocular emergencies and their management.
- Applied aspects of Yantra and Shastra in Netra Chikitsa along with modern ophthalmic surgical instruments and equipments.
- Knowledge of rules, regulations and medico legal aspects of ophthalmic practice including eye donation, eye banking and corneal grafting.
- Knowledge of handling of biomedical waste.

PRACTICAL

100 marks

Contents:

1. Clinical posting in OPD/IPD/Kriyakalpa Kaksha & OT
2. Clinical case presentation (10 cases)
3. Case record (20 cases)
4. Hands on training in Kriyakalpa

Distribution of marks (practical):

- | | |
|--|------------|
| 1. Case Record | - 20 Marks |
| 2. Bed side examination | |
| 3. Long case | - 20 Marks |
| 4. Short case | - 10 Marks |
| 5. Kriyakalpa procedure | -15 Marks |
| 6. Identification of specimens and Instruments | - 15 Marks |
| 7. Viva-voce | - 20 Marks |

REFERENCE BOOKS:-

- | | |
|--|--|
| 1. Charka Samhita with commentaries | |
| 2. Sushrut Samhita and vagbhata with commentaries | |
| 3. Astanga hridaya and Astanga sangraha with commentaries | |
| 4. Madhava nidan with commentaries | |
| 5. Bhavaprakasha with commentaries | |
| 6. Sarangadhara Samhita with commentaries | |
| 7. Sahstrayoga Sangraha | |
| 8. Relevent part of Chakradhatta, Bhel Samhita, Harita Samhita | |
| 9. Shalakya Tantra | - Ramanath Dwivedi |
| 10. Shalakya Tantra | - R.C. Chaudhary |
| 11. The Actions and uses of Indigenou Ophthalmic Drugs | - N.Srikanth |
| 12. Clinical Examination of Ophthalmic Cases | - Agarwal and Gupta |
| 13. Alder's Physiology of the Eye and Clinical Applications | - Cotlier, St. Louis |
| 14. Disease of the Lens and Vitrous, Glaucoma and Hypotony | -Duke Elder, St.Louis |
| 15. A Text Book of Ophthalmology | - Ahmed E. |
| 16. A Text book of clinical ophthalmology | - Dhanda |
| 17. Modern Ophthalmology | - Dutta, L.C. Jaypee Brothers |
| 18. Manual of the Diseases of the Eye | - May,C.andWorth, C.Bailliere Tindal and Castell |
| 19. Ophthalmology – Principles and Concepts | - Newell, F.W., C.V.Mosby Co., St. Louis. |
| 20. Ocular Differential Diagnosis | - Roy Fedrick Hamptn Lea And Febiger |
| 21. Clinical Ophthalmology | - Smith,R.Vergheze Company |
| 22. Abrahm Manual of Refraction | - Duke and Elder |
| 23. Hand Book of ophthalmology | - B.M. Chaterjee |
| 24. Hand Book of ophthalmology | - Khurana |
| 25. Clinical ophthalmology | - Kanski |
| 26. Parsons Diseases of Eye | |
| 27. Stallard's Eye Surgery | |

M.S.-AYURVEDA PRELIMINARY

**21. SHALAKYA- DANTA AVUM MUKHA ROGA
(Dentistry and Oral Disease)**

PAPER-II

Theory- 100 marks

PART-A

Mark 50

1. Shalaky Tantra Parichaya, Itihas avum Pradhanyam.
2. Mukhasharir.
3. Study of Dosha, Dhatu, Mala and Srotas in context to Danta and Mukha Roga.
4. Agropaharaniya in Danta and Mukha Roga incorporating sterilization, Sangyahaarana and diagnostic and therapeutic pharmacological agents.
5. Vrana Siddhanta-Trividha Shopha, Shuddha-Dushta Vrana, Vrana Bandha and Vranitopasana in relation to Danta and Mukha Roga.
6. Swasthavritta related to Danta and Mukha Roga.
7. Chaturvidha Chikitsopaya (Bheshaja-Shastra-Kshara-Agni) Siddhanta and Raktamokshana related to Danta and Mukha Roga.
8. Applied knowledge of various Kriyakalpa and other therapeutic procedures related to Danta and Mukha Roga.
9. Role of Panchkarma in Danta and Mukha Roga.
10. Mukha and Danta Chikitsopayogi Aushadha Kalpana Parijnanam e.g. Dashana Samskara Manjana, Shwetamanjana, Vajradanta Manjana, Khadiradi Vati, Irimedadi Taila, Peetaka Churna, Kalaka Churna, Nimbadi Churna and Bhadramustadi Vati.

PART-B

50 marks

1. Applied orodental anatomy and physiology.
2. Clinical methods adopted in orodental practices.
3. Knowledge of advanced diagnostic techniques, equipments and tests of importance in orodental practices with their interpretations.
4. Classification, aetiopathogenesis, clinical features and therapeutics of Oshtha, Danta, Dantamula, Jihva, Talu and Sarvasar Mukharogas in the light of modern knowledge.
5. Basics of Sandhana Vidhi in Mukha and Danta Roga.
6. Applied aspect of Dysphagia, Manyastambha, Hanumoksha, Apachi (Cervical Lymphadenopathy) and Herpes.
7. Handling of biomedical waste.

PRACTICAL

100 marks

Contents:

1. Clinical posting in OPD, IPD, Kriyakalpa Kaksha and OT.
2. Clinical case presentation (10 cases).
3. Case record (20 cases).
4. Hands on training in Kriyakalpa

Distribution of marks (practical):

1. Case Record - 20 Marks
2. Bed side examination
- a. Long case - 20 Marks
- b. Short case - 10 Marks
- c. Kriyakalpa procedure - 15 Marks
3. Identification of specimens, radiograph and instruments - 15 Marks
4. Viva-voce - 20 Marks

Reference Books

1. Sushrut Samhita
 2. Useful Portion of Charak Samhita-Ashtang Samgraha
 3. Useful portion of Laghutrayi related to Danta and Mukha Roga
 4. Shalakya Vijnanam
 5. Nimi Tantra
 6. Dental Anatomy Histology
 7. Essentials of Preventive and Community Dentistry
 8. Complete Denture Prosthodontics
 9. Orthodontics the Art and Science
 10. Text book of Pediatric Dentistry
 11. Text book of Oral and Maxillofacial surgery
 12. Clinical Periodontology
 13. Anatomy for Dental Students
 14. Clinical Periodontology
 15. Operative Dentistry
 16. Oral and maxilofacial surgery secrets
 17. Killey and Kay's Outline of Oral Surgery
 18. Clinical Dentistry
 19. Synopsis of Oral Pathology
 20. Oral Pathology
- Dalhana
-Ashtang Hridaya

- Ravindra Chandra Chaudhary
- Ramanath Dwivedi
- Dr. S.I. Bhalajhi
-Dr. Soben Peter
- Dr. J.J. Manappallil
- Dr. S.I. Bhalajhi
- Dr. S.G. Damle
- Dr. Vinod Kapoor
- Dr. B.R.R. Varma
- Inderveer Singh
- Carranza , Newman
- M A Marzouk
- A.Omar Abubaker
- Giridon R Seward
- Ivor G. Chestnut , John Gibson
- S N Bhaskar
- Stone

M.S.-AYURVEDA PRELIMINARY
22. SHALAKYA- SHIRO-NASA- KARNA- AVUM KANTHA ROGA
(ENT & HEAD & Neck Disease)

PRACTICAL
PART A

Theory- 100 marks
50 marks

1. Shalakyā Tantra Parichaya, Itihas and 'Pradhanya'. Establishment of 'superiority of Shiras' among all the organs. Determination and importance of the verse 'Nasa hi Shirso Dvaram'.
2. Shiro-Nasa- Karṇa- Avum Kantha Shariram and knowledge of related Marmas.
3. Study of Doṣha- Dhātu-Mala and Srotas in context of Shiro-Nasa- Karṇa- Avum Kantha Chikitsa.
4. Agropaharāniya in Shiro-Nasa- Karṇa- Avum Kantha Chikitsa including sterilization and anesthesia.
5. Basic pharmacology of common modern drugs used in diagnostic and therapeutic procedures related to Shiro-Nasa- Karṇa- Avum Kantha Chikitsa.
6. Vrana Siddhanta- Trividha Shophā, Shuddha- Dushta Vrana, Vrana Bandha and Vranitopasan in context of Shiro-Nasa- Karṇa- Avum Kantha Chikitsa.
7. Swasthavritta related to Shiro-Nasa- Karṇa- Avum Kantha.
8. Chaturvidha Chikitsopaya (Bheshaja- Shastra-Kshar -Agni) and Raktamokshan related to Shiro-Nasa- Karṇa- Avum Kantha Chikitsa.
9. Applied knowledge of various therapeutic modalities like Shirobasti, Shirodhara, Shirovirechana, Nasya, Karṇa Pooran, Karṇa Dhoopan, Kaval, Ganduṣha etc.
10. Role of Panchkarma in Shiro-Nasa- Karṇa- Avum Kantha Chikitsa.

PART B

50 marks

1. Shiras- Applied anatomy and physiology of skull and intracranial contents. Clinical methods and knowledge of common diagnostic equipments, procedures and their interpretation. Classification, etiopathogenesis, clinical features, prognostic considerations and therapeutics of Shiras and Kapaal Rogas in the light of modern knowledge.
2. Nasa - Applied anatomy and physiology of nose and paranasal sinuses. Clinical methods and knowledge of common nasal diagnostic equipments, procedures and their interpretation. Classification, etiopathogenesis, clinical features, prognostic considerations and therapeutics of Nasa Rogas in the light of modern knowledge.
3. Karṇa- Applied anatomy and Physiology of ear and related structures. Clinical methods and knowledge of common aural diagnostic equipments, procedures and their interpretation. Classification, etiopathogenesis, clinical features, prognostic considerations and therapeutics of Karṇa Rogas in the light of modern knowledge.
4. Kantha - Applied anatomy and physiology of throat. Clinical methods and knowledge of common pharyngeal and laryngeal diagnostic equipments, procedures and their interpretation. Classification, etiopathogenesis, clinical features, prognostic considerations and therapeutics of Kanthagata Rogas in the light of modern knowledge.

PRACTICAL

100 marks

Contents:

1. Clinical posting in OPD, IPD, Kriyakalpa Kaksha and OT.
2. Clinical case presentation (10 cases).
3. Case record (20 cases).
4. Hands on training in Kriyakalpa.

Distribution of marks (practical):

1. Case Record -20 Marks
2. Bed side examination
 - A. Long case - 20 Marks
 - B. Short case - 10 Marks
 - C. Kriyakalpa procedure - 15 Marks
3. Identification of specimens and Instruments - 15 Marks
4. Viva-voce - 20 Marks

REFERENCE BOOKS:-

1. Sushrut Samhita
2. Charak Samhita
3. Ashtang Hridaya
4. Ashtang Samgraha
5. Laghutrayi
6. Modern books related to ENT disorder
7. Diseases of Nose Throat and Ear - Bhargav Shah
8. Diseases of Nose Throat and Ear, Head and Neck EB Edr.
9. A Textbook of otorhinololaryngology - Scott Browns editions.
10. Text book of Ear Nose Throat diseases – Dhingra
11. Textbook on ENT – Mohd. Maqbool
12. Logan Turner’s book on ENT
13. Ballengers text book of ENT
14. Kumin’s text book of ENT
15. Rob Smith’s book of ENT surgery
16. Paprella’s book of ENT
17. Hazarika’s text book on ENT
18. Books on examination of ENT
19. Audiology Anirwan Biswas
20. Kurt’s Audiology
21. Books on Speech therapy
