M.D./M.S.-AYURVEDA

PRELIMINARY PAPER-I
RESEARCH METHODOLOGY AND MEDICAL STATISTICS

PART-A
RESEARCH METHODOLOGY

1 **Introduction to Research**

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

2 **General guidelines and steps in the research process**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

PART–B **40 marks**

MEDICAL STATISTICS **Teaching hours: 80**

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

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

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

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

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

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

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

8 Univariate analysis of categorical data:

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

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

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

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

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

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

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

PRACTICAL 100 marks

I. RESEARCH METHODOLOGY
Teaching hours 120

PRACTICAL NAME

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

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

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

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

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

5 Pharmacology and toxicology

Familiarization and demonstration of techniques related to pharmacology and toxicology

6 Biochemistry (Clinical)

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

7 Clinical Pathology

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

8 Imaging Sciences

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

9 Clinical protocol development

II. MEDICAL STATISTICS

Practical houís:20

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

Distribution of marks (practical):

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

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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
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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 medicinalplants (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 1to 3. Ministry ofHealth and Family Welfare. Controller of Publication. Govt of India. New Delhi.
2. Brain, KR and Turner, TD. (1975). The Practical Evaluation Phytopharmaceuticals. Wright Scienctechnica, 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.
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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.
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6. Harold Varley. Practical Clinical Bio-chemistry
7. Kanai L.Mukherjee. Clinical Pathology:,Medical Laboratory Technology Vol. I.Tata McGrawHill1996, New Delhi.
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9. Clinical Biochemistry -Sabitri Sanyal, Clinical Pathology, B.I.Churchill Livingstone (P) Ltd, NewDelhi.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 Fensternmaker. (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
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10. Kumar, R. 2005. *Research Methodology: a Step-by-Step Guide for Beginners, 2nd ed.* ThousandOaks, CA, London: Sage Publications.
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12. Relevant portions of Ayurvedic Samhitas and other texts

Drug research and development:

1. RICK NG, (2009). DRUGS- from discovery to approval. John Wiley & Sons, Inc., Hoboken, NewJersey
2. Research guidelines for evaluating the safety and efficacy of herbal medicines. (1993). . WHO- (Regional Office for the Western Pacific – Manila) ISBN 92 9061 110 3 (NLM Classification: WB925).
3. Jagdeesh, Sreekant Murthy, Gupta, YK and Amitabh Prakash Eds. Biomedical Research (FromIdeation 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. AYUSHGuidelines on safety studies- Rule 170 of Drugs and Cosmetics Act.
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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)
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12. *Bombay.*\
13. Jaju B.P.: Pharmacological Practical Exercise Book, *Jaypee Brothers, New Delhi.*
14. Kulkarni S.K.: Hand Book of Experimental Pharmacology, *Vallabh Prakashan, New Delhi*
15. Ravindran R.: X-Pharm (Software), Indian Journal of Pharmacology, *JIPMER, Pondicherry.*

Biotechnology and Bio-informatics:

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

Clinical Evaluation:

1. CDSCO, Good Clinical Practices For Clinical Research in India, Schedule Y (Amended Version –2005),http://cdsco.nic.in/html/GCP1.php
2. Ethical Guidelines for Biomedical Research on Human subjects. (2000). Indian Council of MedicalResearch- New Delhi.
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Medical Statistics:

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2. Armitage P, Berry G, Matthews JNS: *Statistical Methods in Medical Research*. Fourth edition.Oxford, Blackwell Science Ltd; 2002
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4. Bradford Hill – Basic Medical Statistics
5. Cambell, M.J. and Machin, D. (1993) Medical Statistics: A Common Sense Approach (2nd ed).Chester: Wiley.
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9. Mahajan B K, Methods in Bio statistics for medical students, 5th Ed. New Delhi, Jaypee BrothersMedical Publishers
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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

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M.D.-AYURVEDA PRELIMINARY
PANCHKARMA (Five Therapeutic procedure)
PAPER-II

Theory- 100 marks

PART A 50 marks

1. Chikitsa and its classifications; Antah-Parimarjana and Bahir-Parimarjana Chikitsa
2. Principles of Chikitsa, Kriyakal, Shadvidha and Dvividha 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 including Gridhrasi (sciatica) and Vishvachi (Brachial neuralgia).
6. 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.
7. Knowledge and method of examination of various skin lesions.
8. 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.

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.

PRACTI CAL 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 taru Gangadhara
2 Sushrutha Samhita with the Nibhandha Samgraha commentary of Dalhana and Nyayachandrik 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
15 The Panchkarma Treatment of Ayurved with Kerala Specialities
Dr. Mandip and Dr Gurdip Singh Dr. T.L. Devaraj
16 Panchkarma Therapy Dr. R.H. Singh
17 Principles and practice of vasti Dr. Vasudevan Nampoothiri and Dr. L. M
18 Claiton's Physiotherapy
19 Teddy's Physiotherapy
20 Harrison's Principles of Inernal Medicines
21 Guyton's Physiology

M.D.-AYURVEDA FINAL

PANCHKARMA

(Five Therapeutic procedure)

PAPER–I Purva Karma-Snehana and Svedana

1. Panchkarma in Ashtanga Ayurved and Significance of Shodhana

2. Ama and Shodhana, benefits of Shodhana, Samikshya Bhavas in Shodhana,

3. Importance of Pachana prior to Snehana, methods, drugs, duration and dose for Pachana, samyak Lakshana of Pachana

Snehana

1. Etymology and definition of Sneha and Snehana

2. General considerations about Snehana

3. Classifications of Sneha, Sneha-Yoni, detailed knowledge of four types main SnehaGhrita, Taila, Vasa and Majja with their characteristics, importance and utility, various aspects of Uttama Sneha

4. Properties of Snehana Dravya and their interpretation

5. Effects of Snehana

6. Sneha Kalpana, various types of Sneha Paka with their utility

7. Indications and contraindications of Snehana

8. Classification of Snehana: Bahya and Abhyantara Snehana

9. Bahya Snehana and Bahir-Parimarjana, utility and importance of Bahya Snehana 10. Classification of Bahya Snehana

Methods, indications, contraindications, specific utility of the followings Abhyanga, Mardana, unmardana, Padaghta, Samvahana, Udvartana/Utsadana, Udgharshana, Avagaha, Pariseka, Lepa, Pralepa, updeha, Gandusha, Kavala; Karana and Nasa Purna, Akshi Tarpana; Murdhni Taila: Shiro-abhyanga, Shirodhara, Siro Pichu and Siro Basti, Shiro Lepa (Talapotichil), Talam and Takradhara, etc.

11. Knowledge of digestion and metabolism of fat

12. Karmukata of Abhyantara and Bahya Snehan

13. Knowledge of different western massage techniques

14. Abhyantra Snehana: Brimhnartha, Shamanartha and Shodhanartha, definition, method and utility of Brimhanartha and shamanrtha Snehana; difference between Shamanartha and Shodhanartha Snehana

15. Methods of Abhyantar Snehana

16. Shodhanartha Snehana: Acchapana and Vicharana, Utility and various methods of Sadyasnehana, Avapidaka Sneha

17. Matra of Sneha : Hrasiyasi, Hrasva, Madhyama and Uttma Matra with their indications, specific utilty of Ghrita, taila, Vasa and majja; Anupana of Sneha

18. Need and method of Rukshana before performing Snehana in specific conditions and Samyak Rukshana Lakshana

19. Shodhannga Snehana Vidhi and methods of fixation of dose

20. Diet and Pathya during Snehana

21. Observation of sneha Jiryamana, Jirna and Ajirna Lkashana

22. Samyak, Asnigdha and Ati Yoga Lakshana of Snehana

23. Snehs vyapta and their management

24. Pariharya vishaya and Parihara Kala

Svedana

1. Etymology and definition of Svedana

2. General considerations about Svedana

3. Properties of Svedan and Svedopaga Dravya

4. Indications and contraindications of Svedana

5. Various Classifications of Sveda and Svedna

6. Detailed knowledge of four types of Sveda of Sushruta with their utility;

7. Hina, Mridu, Madhya and Mhana Sveda; Ekanga and Sarvanga sveda with their utility

8. Utility and method of each of 13 types of Sagni and 10 types of Niragni Sveda

9. Shodhannga and Samshamaniya Sveda

10. Methods to protect the vital organs (varjya anga) during Svedan Procedure

11. Detailed Knowledge about Utility of below mentioned Svedan procedures:- Patrapinda Sveda, Shashtika Shalipinda Sveda, Churna Pinda Sveda, Jambira Pinda Sveda, Dhanya Pinda Sveda, Kukkutanda Sveda, Anna lepa, Valuka Sveda, Ishtika Sveda, Nadi Sveda, Bashpa Sveda, Kshira bashpa Sveda, Avagaha Sveda, Parisheka Sveda, Pizichil, Dhanyamla Dhara, Kashaya Dhara, Kshira Dhara and Upanaha Sveda.

12. Avasthanusari Svedana in various disorders

13. Samyak, Ayoga and Atiyoga Lakshana, Sveda Vyapat and their management

14. Diet and regimens during and after Svedana

15. Karmukata of Svedana

16. Current sudation modalities like Sauna bath, Steam Bath, Infrared, etc.

17. Svedana with Kati Basti, Janu Basti and Griva Basti

18. Study of Snehana and Svedana related portions in classics with commentaries

PAPER – II Vamana and Virechana Karma

Vamana Karma

1. Etimology, definition and general considerations of vamana

2. Properties of Vamaka and Vamanopaga drugs

3. Knowledge and utility of important Vamaka drugs and their preparations (Vamana Yoga)

4. Avasthanusara Vamana and its utility.

5. Indications of Vamana

6. Contraindications of Vamana with reasons

7. Pachana prior to Snehana

8. Detailed knowledge and method of preparation of patient with Snehana

9. Abhyanga and Svedana as Purvakarma of Vamana

10. Diet and management of gap day

11. Need of increasing of Kapha for proper Vamana, Kapha increasing diet

12. Management of Patients on the morning of Vamana

13. Administration of food articles prior to Vamana

14. Drug, time, Anupana, Sahapana, dose and method of administration of Vamana and Vamanopaga preparations

15. Method of Vamana Karma, waiting period for automatic Vamana Vega and manipulation in its absence

16. Observations prior to beginning of Vamana such as sweat on forehead, horripilation, fullness of stomach and nausea

17. Observation and assistance of the patient during Vamana

18. Vega and Upavega of Vamaana and its counting, observations and preservation of vomitus matter and its weighing

19. Samyak, Ayoga and Atiyoga of Vamana

20. Laingiki, Vaigiki, Manaki and Antiki Shuddhi,

21. Hina, Madhya and Pravara Shddhi and Samsajana Krama accordingly

22. Detail knowledge of methods of Samsarjana Krama and its importance

23. Kavala and Dhumapana after vamana

24. Management of Ayoga, Atiyog and Vyapat of Vamana with Ayurveda and modern drugs

25. Parihara Vishaya and Kala for Vamana

26. Vamana Karmukata with Pharmaco-dynamics of Vamana

Virechana Karma

1. Etymology, definition and general considerations of Virechana

2. Importance of Vamana and Virechana as shodhana, Virechana better than Vamana

3. Necessity of Vamana prior to Virechana

4. Preparation of patients for Virechana after Vamana

5. Preparation of patients directly for Virechana

6. Properties of main Virechaka and Virechanopaga drugs, Classifications of Virechana drugs with definition, example and utility of each type

7. Indications of Vamana Karma

8. Contraindications of Virechana with reasons

9. Utility of Virechana for the specific conditions and stages of the disease

10. Internal Snehana for Virechana with diet

11. Management of 3 gap day with diet and importance of low Kapha for proper Virechana

12. Abhyanga and Svednana as Purvakarma of Virechana

13. Management of Patients on the morning of Virechana

14. Virechana should be performed in empty stomach

15. Drug, dose, time, Anupana, sahapana and method of administration of Virechana and Virechanopaga preparations

16. Method of performing of Virechana Karma

17. Observations during Virechana, Vega and Upavega of Virechana and its counting, observations and preservation of fecess and its weighing 18. Samyak, Ayoga and Atiyoga of Virechana

18. Laingiki, Vaigiki, Manaki and Antiki Shuddhi of Virechana

19. Hina, Madhya and Pravara Shddhi and Samsajana Krama accordingly

20. Detail knowledge of methods of Samsarjana Krama and its importance, and Tarpana krama and its importance

21. Management of Ayoga, Atiyog and Vyapat of Virechana with Ayurveda and modern drugs

22. Parihara Vishaya and Kala for Virechana

23. Virechana a Karmukata with Pharmaco-dynamics of Virechana

24. Applied anatomy and physiology of Gastrointestinal system related with Vamana and Virechana

25. Study of Vamana and Virechana related portions in classics with commentaries

26. Recent advances of researches on the effect of Vamana and Virechana 28. Scope of research for Vamana and Virechana.

29. Role of Vamana and virechana in promotion of health prevention and treatment of diseases

PAPER – III Basti Karma and Nasya Karma

Basti Karma

1. Etymology, definition and general considerations of Basti

2. Importance of Basti in Kayachikitsa and other branches of Ayurveda

3. Classifications of Basti

4. Drugs useful in Basti

5. Indications of Basti, its role at the various stages of diseases

6. Contraindications of Basti with reasons

7. Description of Basti yantras, Basti netra and Basti putaka and their Doshas. Modified Basti Yantra, their merits and demerits

8. Dose schedules of Niruha and Anuvasana basti

Niruha basti

Etymology, synonyms, definition and classifications and subclassifications of Niruha Basti and detailed knowledge of each type of Niruha Basti along with indications and contraindications and benefits

Contents of various types of Niruha Basti, their peoportions, methods of mixing basti

Dravya,

Relation of Virechana, Shodhana, Anuvasana Basti with Niruha Basti

Purvakarma for Niruha Basti; Pathya before, during and after Niruha Basti; all the aspects of administration of various Niruha Basti Observations during and after Niruha Basti Basti Pratyagamana,

Samyakyoga, Ayoga and Atiyoga Lakshana and Various Vyapat of Niruha Basti and their management according to Ayurved and Modern Systems of Medicines Management during and after Niruha Basti

Pariharya vishaya and pariharakala,

Anuvasana basti

Etymology, synonyms, definition and classifications of Anuvasana Basti and detailed knowledge of each type of Anuvasana Basti along with indications and contraindications and benefits

Various types of Ghrita and Taila useful in Anuvasana Basti; Anuvasana Basti with Vasa and Majja along with their merits and demerits

Relation of Virechana, Shodhana, Niruha Basti, Snehana with Anuvasana Basti

Purvakarma for Anuvasana Basti; Pathya before, during and after Anuvasana

Basti;all the aspects of administration of Anuvasana Basti including Kala

Observations during and after Anuvasana Basti Anuvasana Basti Pratyagamana,

Samyakyoga, Ayoga and Atiyoga Lakshana and Various Vyapat of Anuvasana Basti and their management.

Management during and after Anuvasana Basti

Pariharya vishaya, Pathya and pariharakala for Anuvasana

Various combined basti schedules such as Karma, Kala, yoga Basti etc.

Detailed knowledge of Matra Basti

Detailed Knowledge of different basti formulations like Piccha Basti, Kshira Basti, Yapana Bastis, Madhutailika Basti, Erandamuladi Niruha Basti, Panchaprasrutika Basti, Kshara Basti, Vaitarana Basti, Krimighna Basti, Lekhana Basti,Vrishya Bsti,Manjishtadi Niruha

Basti,Dashamula Basti, Ardhamatrika Basti,Sarva roghara Niruha Basti,Brimhana Basti, Vataghna Basti, Pittaghna Basti and Kaphaghna Basti etc, and their practical utility.

Uttara basti

1. Definition and Classification of Uttara Basti, its Netra and Putaka. Dose of Uttara Basti Sneha and Kashaya Basti. Different Uttara Basti Kalpanas in various diseases.

2. Detailed knowledge of Purvakarma and Administration of uttara Basti in male and female, precautions, aseptic measures, complications and thier management Karmukata of Basti. Applied anatomy and physiology of colon, Pharmaco-dynamics of Basti.

3. Concept of 'Gut Brain' and its relevance to Basti Therapy.

4. Study of relevant portions of Basti in classics with commentaries.

Nasya Karma

1. Etymology, synonyms, importance and definition of Nasya

2. Nasya drugs according to various Samhita

3. Classifications and sub-classifications of Nasya with detailed knowledge of each type

4. Indications and contraindications of each type of Nasya with reasons

5. Drugs useful for Nasya with Dose and methods of preparations and their doses

6. Nasya Kala and Pathya before, during and after Nasya; Duration of different Nasyas

7. Purvakarma of each types of Nasya

8. Detailed knowledge of administration of each type of Nasya with management during and after Nasya.

9. Detailed knowledge of common Nasya formulations such as Shadabindu Taila, Anu taila, Kshirabala Taila, Karpasastyadi Taila, Bramhi Ghrita.

10. Samyak yoga, Ayoga and Atiyoga of each types of Nasya, its Vyapat and their management

11. Pashchata Karma; Role of Dhumapana, Kavala after Nasya,

12. Diet and Pathya before, during and after Nasya Karma

13. Pariharya vishaya, Parihara Kala,

14. Nasya Karmukata, Applied anatomy and physiology related to Nasa hi Sirso Dvaram, blood and nerve supply to nose, Shringataka marma, olfactory nerve and centers, aroma therapy, trans nasal administration of drug, recent advances in nasal drug delivery

15. Study of relevant portion in classics with commentaries

PAPER – IV Raktamokshana, Physiotherapy and Diseasewise Panchakarma

A. Raktamokshana-33 Marks

1. Definition, importance, classifications and detailed knowledge of each type of Raktamokshana with their methods of performance

2. General principles, indications, contraindications of Raktamokshana

3. Detailed knowledge of Jalaukavacharana: Indications and contraindications of Jalaukavacharana, various tyoes of Jalauka with their beneficial and harmful effects.

4. Purvakarma and method of Jalaukavacharana, observations and Pathya before, during and after Jalaukavacharana

5. Management during and after Jalaukavacharana

6. Symptoms of Samyak, Ayoga and Atiyoga and Vyapat of of Raktamokshana and their management with Ayurveda and Modern medicines. 7. Pariharya vishaya and Parihara kala

8. Karmukata of different types of Raktamokshana

B. Clinical Physical Medicine-33 Marks

1. Definitions and terminology

2. Biomechanics of human movements; Physiology of exercise

3. Treatment modalities used in Physical Medicine- general properties and detailed clinical use of each

a. Heat – general physiological properties and mode of action as a treatment agent,

Forms of heat therapy – superficial and deep heating. General knowledge of Infrared, Paraffin Wax bath, short wave diathermy, electro magnetic therapy, ultra sound therapy, convection heating devices,

b. Cold as a therapeutic agent

c. Prescription of physical modalities and their applications in medicine.

4. Clinical use of massage, manipulation, stretching

5. Principles of occupational therapy, training in activities of daily living for rehabilitation, self-help devices (walking aids, wheelchairs, tricycles & modified vehicles), instrumental activities of daily living,

6. Physiotherapy exercises for Paralytical disorders, cervical spondylosis, frozen shoulder and slip disc.

C. Disease-wise Panchakarma-34 Marks

Role of Panchakarma in Different Stages of the following Diseases:

Jvara, Raktapitta, Madhumeha, Kushtha, Shvitra, Unmada, Apasmara, Shotha, Plihodara, Yakridaluodara, jalodara,, Arsha, Grahani, Kasa,Tamaka Shwasa, Vatarakta, Vatavyadhi, Amlapitta, Parinama Shula, Ardhavabhedaka, Ananta Vata,, Amavata, Sheetapitta, Shleepada, Mutrakruchchra, Mutrashmari, Mutraghata, Hrudroga, Pinasa, Drushtimandya, Pandu, Kamala, Sthaulya, Krimi, Madatyaya, Moorchcha, Padadari,

Mukhadushika, Khalitya, Palitya,

Use of Various panchakarma Procedures in the following disorders -

Migraine, Parkinson's Disease, trigeminal neuralgia, Bell's palsy, cerebral palsy, Muscular dystrophy, hemiplegia, paraplegia, Lumbar Disc disorders, Spondylolisthesis, Ankylosing spondylosis, Carpel Tunnel Syndrome, Calcaneal Spur, Plantar fascitis, GB syndrome, Alzhiemer's disease, Irritable Bowel Syndrome, ulcerative colitis, psoriasis, hypothyroidism, hyperthyroidism, hypertension, allergic rhinitis, , Eczema, diabetes mellitus, Chronic obstructive pulmonary Disease, Insomnia, Rheumatoid Arthritis, Gout, Osteoarthritis,multiple sclerosis, SLE, male & female infertility, cirrhosis of liver,

Jaundice, General Anxiety Disorders,

Reference Books:

1 Charak Samhita with commentary of Ayurved Agnivesha

Dipika by Chakrapanidatta and Jalpakalpa

taruby Gangadhara

2 Sushrutha Samhita with the Nibhandha Sushrutha

Samgraha commentary of Dalhana and Nyayachandrika panjika of Gayadasa on nidansthana

3 Ashtang Hridaya with Sarvanga sundara and Vaghbhata

Ayurved rasayana commentaries Ashtanga Sangraha with Shashilekha Vaghbhata commentery

Bhela Samhita

Kashyapa Samhita

Bhavaprakasha of Bhavamishra

Sharangadhara Samhita

Vangasen

Gadanigraha

4 Ayurvediya Panchkarma chikitsa Dr Mukundilal Dwivedi 5 Panchkarma Vigyan Dr Haridas Shreedhar Kasture 6 Illustrated Panchkarma Dr.G Srinivasa Acharya

7 Ayurveda-Principles and Practice of Dr. Mandip and Dr Gurdip Singh Panchakarma

8 The Panchkarma Treatment of Ayurved with Dr. T.L. Devaraj

Kerala Specialities

9 Panchkarma Therapy Dr. R.H. Singh

10 Principles and practice of vasti Dr. Vasudevan Nampoothiri and Dr.

L. Mahadevan

11 Claiton's Physiotherapy 12 Teddy's Physiotherapy

13 Harrison's Principles of Inernal Medicines

14 Guyton's Physiology