

Environmental Toxicology

POST GRADUATE DEGREE STANDARD

Paper I (Section-A)

1. Molecular Pharmacology

- i Drug Receptors
- ii Chemical Bonds
- iii Drugs And Enzymes
- iv Structure Activity Relationship

2. Cellular Pharmacology

- i Biological Membrane And Transport Accross Membranes
- ii Drug Effect On Extra Cellular. Tissue Ingredients.

3. Integral Pharmacology

- i Pharmacokinetics
- ii Principal Effects Of Drugs
- iii Side Effects Of Drugs
- iv Complex Drug Actions - Commulation, Tolarence, Synergism, Antagonism, Potentiation.

4. Pharmacogenetics

5. Drug Selectivity

6. Chemotheraphy

- i General Principles Of Chemotheropy
- ii Chemotherapy Of Infectious Diseases
- iii Chemotherapy Of Malignancy

7. Quantative Aspects In Pharmacology

- i Dose Response Relationship
- ii Bioassay
- iii Chemical Assay
- iv Radio Immuno Assay
- v Drug Standardization

8. Pharmacological Screening Of Siddha

Medicinal Preparations

- i Selection Of Plants, Minerals And Animal Products Used In Siddha Medicine

- ii Extraction,Preparation And Screening Of Pharmacologically Active Principles In Various Experimental Models.

9. Biostatistics

Centering Constants; Means, Median And Mode, Variability Constants- Average, Range, Interquartile Range, Average Deviation, Standard Deviation;

Tests Of Significance Student's Test, Chi Square Test, Anova, Application Of Statistics In Evaluation Of Siddha And Herbal Preparations And Formulations

Paper I (Section - B)

General Principles Of Toxicology

- 1 Introduction To Toxicology- Toxicology - Definition And Branches - Classification Of Toxic Agents.
- 2 Toxins - Acute And Chronic Exposure - Route, Site, Duration And Frequency Of Exposure.
- 3 Spectrum Of Toxic Effects - Allergic And Idiosyncratic Reactions; Toxicity; Immediate And Delayed; Reversible And Irreversible; Local Systemic And Selective.
- 4 Toxicokinetics - Absorption, Distribution, Metabolism And Excretion And Influencing Factors.
- 5 Dose - Response Relationship - Ld 50, Ed 50
- 6 Mechanism Of Action.
- 7 Chemical - Chemical Interaction, Chemical - Diet Interaction - Potentiation, Synergism And Antagonism.
- 8 Factors Influencing Toxicity - Factors Related To The Agent, Exposure Situation And Internal Environment Of The Subject, External Environmental Factors.
- 9 Toxicity Tests In Animals - Acute, Subacute And Chronic Tests Mutagenicity, Teratogenicity And Carcinogenicity
10. Carcinogenicity Tests, Interpretation Of Laboratory Data.
- 10 Treatment And Management Of Poisoning - Antidotal Principles And Their Application.

Paper I (Section-C)

Instrumentation

- 1 Thin Layer Chromatography & Paper Electrophoresis
- 2 U.V. - Vis Spectro Photometry - Differential Spectrophotometry
- 3 Infra-Red Spectrophotometry - Interpretation Of Spectra.
- 4 NMR Spectrophotometry And Its Applications.
- 5 Mass Spectrometry As Applied To Drugs Analysis
- 6 Gas chromatography & G C - Ms Techniques.
- 7 Atomic Absorption Spectrophotometry And Neutron Activation Analysis As Applied To Elemental Analysis.
- 8 X-Ray Diffraction In Toxicological Analysis
- 9 High Performance Liquid Chromatography In Toxicology
- 10 Radio Immuno Assay In Analysis Of Body Fluids For Poisons.

PAPER -II

Paper II (Section-A)

I. Drugs Acting On Various Systems

i Cns

- ii Ans
- iii Respiratory
- iv Cardio Vasular
- v Gastrointestinal
- vi Genito Urinary
- vii Musculo Skeletal

II. Reproductive Pharmacology : -

- (i) Drugs Acting On The Male & Female Reproductive System
- (ii) Antifertility Agents
- (iii) Hormone Replacement Therapy

III. Hormones And Hormone Antagonists : -

- (i) Endocrinological Disorders And Drug Treatment
- (ii) Anti Diabetic Drugs
- (iii) Anti Thyroid Drugs
- (iv) Hormone Replacement Therapy in Endocrinological Disorders

IV. Vitamins, Minerals And Nutritional Supplements:-

- (i) Deficiencies And their Drug Treatment.

V. Analgesic, Anti Pyretic And Antinflammartory Drugs -

Drugs Used In Inflammatory Disorders - Anti Artheritic, Gout Drugs.

VI. Chemotherapy

General Principles - Chemotherapy Of Infectious Diseases, Chemotherapy Of Malignancy.

Paper II (Section-B)

1. Preliminaries - Central & Peripherac Nervous Systems Neuro Transmitters
2. Drug Addiction & Habituation
3. Drug Dependence
4. Social & Personality Factors Conductive To Drug Dependence
5. Dependence Potential And Dependence Liability
6. Narcotic Analgesies
7. Cannabis And Cannabenoids
8. Psychotogenic Drugs.
9. Amphetamines.
10. Cocaine And Erythroxyton Coca
11. Mono Amine Oxidase Inhibitors - Triexelic Antidepressants
12. Xanthine Beverages And Xanthine Alkaloids
13. Abuse Of & Toxicity Associated With Hypnotics And Seditives.

- (i) Barbiturates
- (ii) Benzodiazepines
- (iii) Miscellaneous

14. (i) Acute & Chronic Toxicity Associated With Abeottol Abuse
- (ii) Toxicity & Treatment Associated With Methanol Poisoning

15. Abuse Of Inhalants & Glue Sniffing.
16. Tobacco Smoking - Tobacco Use - Toxicity & Complications Associated With
17. Treatment & Prevention Of Drug Addiction.
18. Siddha & Other Methods Associated With The Treatment & Prevention Of Drug Addiction
19. Siddha Drugs In Preventing & Treating Drug Toxicity Associated With Liver And Other Organs.
20. Experimental Techniques In Evaluating The Addiction Potential And Liability Of A Drug.

Paper II (Section-C)

Forensic Toxicology

- 1 Poisons Acts And Type Of Poisoning In India.
- 2 Mode Of Action of Poisons.
- 3 Causes Which Modify The Effects
- 4 Corrosive Poisons
- 5 Metals And Their Salts And Methods Of Estimation
- 6 Volatile Poisons - Mode Of Action And Analysis
- 7 Insecticides
- 8 Synthetic Drugs
- 9 Plant Poisons And Animal Poisons-Isolation From Body Fluids.
- 10 Extraction And Purification In Toxicological Analysis.
- 11 Screening Tests For Common Poisons.
- 12 Gas Analysis.
- 13 Glycosides And Alkaloids And Analysis From Biological Fluids
- 14 Barbiturates And Other Synthetic Drugs
- 15 Metabolic Pathways Of Poisons