

DEVI AHILYA VISHWAVIDYALAYA, INDORE



Faculty of Science

B.Sc. (Pharmaceutical Chemistry)

**DEVI AHILYA VISHWAVIDYALAYA,
INDORE (M.P.)-542 001**

DEVI AHILYA VISHWAVIDYALAYA, INDORE
UNDER GRADUATE SEMESTER WISE SYLLABUS

Syllabus of B.Sc. Pharmaceutical Chemistry
Session 2014-2015 & Onwards

SCHEME OF MARKS

B.Sc. I Year

Semester I

Organic Pharmaceutical Chemistry
Practicals

100 marks
50 marks

Semester II

Inorganic Pharmaceutical Chemistry
Practicals

100 marks
50 marks

15 Marks CCE + 85 Marks Semester Examination = 100 Marks for Each Paper

~~103~~
30/7/2014

बी.एससी (स्नातक) कक्षाओं के लिये सेमेस्टर अनुसार पाठ्यक्रम
B.Sc (Graduate) semester wise Syllabus
2014-2015 & Onwards

Max. Marks / अधिकतम अंक : 85

Min. Marks: 28

Class / कक्षा

: B.Sc / बी.एससी

Semester / सेमेस्टर :

: I

Title of Subject Group / विषय समूह का शीर्षक

: **Pharmaceutical Chemistry**

Paper Title/प्रश्न पत्र शीर्षक

: **Organic Pharmaceutical Chemistry**

Compulsory / अनिवार्य

: **Compulsory**

Particular / विवरण

UNIT I	<p>Introduction to Pharmaceutical Chemistry Pharmacy and pharmaceutical chemistry as a career, Important aspects of pharmaceutical chemistry, Importance of chemistry in pharmacy, History of pharmacopoeia. Drug: Classification and Sources Classification of drugs, Sources and uses of natural drug products, Biological (plants, animals and microbes), Geographical, Marine and Mineral sources.</p>
UNIT II	<p>Drug Introduction to biological defenses, Theories of drug action: Surface active agents, Metabolic antagonism, Enzyme neutralizers, Mechanism of drug action. Drug Receptors Introduction to drug receptors, Nature of drug receptors, Different bondings involved in drug-receptor interactions. Drug receptor theories</p>
UNIT III	<p>Drug Absorption Routes of Drug Administration, Absorption of Drugs and factors affecting Absorption. Physiology of Biomolecules Physiological Functions of Carbohydrates, Lipids and Proteins, Digestion and biological oxidation of Carbohydrates, Fats and Proteins.</p>
UNIT IV	<p>Medicinal System Different types of medicinal systems, Study of liquid solutions such as Aromatic waters, Solutions and Lotions. Extraction Methods Extraction methods: percolation, maceration and infusion, Manufacturing procedure of crude extracts such as tinctures and infusions.</p>
UNIT V	<p>Dispensing Pharmacy System of weights and measures in pharmacy. Dilution and concentration of formulation. Calculation by Alligation method: Alligation medial and Alligation alternate. Pharmaceutical Dosage Meaning of pharmaceutical Dose and Dosage Formulae, Factors affecting Pharmaceutical Dose, Types of drug-drug antagonism.</p>

15 Marks CCE + 85 Marks Semester Examination = 100 Marks for Each Paper

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 30/7/2014

Books Suggested

1. G.R.Chatwal, Pharmaceutical Chemistry Inorganic Vol. I, Himalaya Publishing House, Bombay.
2. Dr.J.L.Jain, Fundamentals of Biochemistry, S.Chand & Company Ltd. New Delhi.
3. F.S.K.Barar, Essentials of Pharmacotherapeutics, S.Chand & Company Ltd. New Delhi.
4. R.S.Gaud & Dr. G.D.Gupta, Practical Pharmaceutics, CBS Publishers and Distributors, New Delhi
5. N.C.Choudhary and N.K.Gurbani, Pharmaceutical Chemistry. Vallabh Prakashan, Delhi.
6. N.K.Jain, Textbook of Professional Pharmacy. Vallabh Prakashan, Delhi.
7. B.M.Mithal., A text book of Pharmaceutical formulation. Vallabh Prakashan, Delhi.
8. Stenlake & Beckett, Practical Pharmaceutical Chemistry Part I, CBS Publishers and Distributors. New Delhi.

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30/7/2014

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Min. Marks: 17

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Title of Subject Group / विषय समूह का शीर्षक

: **Pharmaceutical Chemistry**

Paper Title/प्रश्न पत्र शीर्षक

: **Practical**

Compulsory / अनिवार्य

: **Compulsory**

Particular / विवरण

Examination: 4 hours

I Preparation of pharmaceutical compounds:

12 Marks

(a) Aspirin (b) Acetanilide (c) Chrome alum (d) Potash alum (e) Mohr's salt
(f) Salicylic acid (g) Zinc oxide (h) p-bromoacetanilide (i) Anthraquinone from
anthracene (j) Reduction of nitro benzene, etc.

II Volumetric estimation:

12 Marks

Acid – base titration

(a) Strong acid with strong base (b) Weak acid with strong base
(c) Weak base with strong acid.

III Paper Chromatography:

12 Marks

(a) Separation of Amino acids.

(b) Separation of Plant pigments.

IV Viva

06 Marks

V Practical record

08 Marks

J. H. S.
30/3/2014

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: **Pharmaceutical Chemistry**

Paper Title/प्रश्न पत्र शीर्षक

: **Inorganic Pharmaceutical Chemistry**

Compulsory / अनिवार्य

: **Compulsory**

Particular / विवरण

UNIT I	<p>Impurities in Pharmaceutical Substances Sources of impurities in pharmaceutical chemicals, Effect of impurities, Permissible impurities in pharmaceutical substances.</p> <p>Purification of Pharmaceutical Substances Methods used to purify Inorganic Substances, Tests of purity, Limit test-Arsenic, Lead, Sulphate, Iron and other Heavy metals.</p>
UNIT II	<p>Volumetric Estimation Introduction to volumetric estimation, Conditions, Requirement and Advantages of volumetric analysis. Primary standard and secondary standard, Methods of expressing concentration in volumetric analysis and numerical based on it.</p> <p>Titration Methods Types of titration methods: Acid-base titrations, Non-aqueous titrations, Oxidation-Reduction titrations, Precipitation titrations, Complexometric titrations.</p>
UNIT III	<p>Pharmaceutical Compounds I Preparation and uses of: Alum, Aluminium hydroxide gel, Antimony potassium tartarate, Antimony sodium tartarate injection, Ammoniated mercury, Sodium antimony gluconate.</p> <p>Preparation and uses of: Ammonium chloride, Ammonium bicarbonate, Aromatic spirit of ammonia, Potassium iodide, Potassium permanganate, Chlorinated lime.</p>
UNIT IV	<p>Pharmaceutical Compounds - II Preparation, properties and uses of : Boric acid, Borax, Plaster of paris, Potassium citrate, Magnesium containing antacids, Dicalcium phosphate, Sodium metaphosphate.</p> <p>Preparation, properties and uses of: Zinc oxide, Sodium benzoate, Lunar caustic (silver nitrate), Sodium fluoride, Potassium acetate, Zinc chloride.</p>
UNIT V	<p>Colloidal System and Application Types of colloidal systems: Emulsions, Gels, Sols (Lyophobic and Lyophilic), Preparation of Lyophobic sols, Multimolecular, Macromolecular and Associated colloids, Protective action of Lyophilic colloids and Gold number, Properties of Colloidal Solutions: Physical, Mechanical, Optical and Electrical. Hardy Schulze law and Flocculation value, Pharmaceutical application of Colloids.</p>

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2. Dr.J.L.Jain, Fundamentals of Biochemistry, S.Chand & Company Ltd. New Delhi.
3. B.S.Bahl and G.D.Tuli. Physical Chemistry, S.Chand & Company Ltd. New Delhi.
4. F.S.K.Barar, Essentials of Pharmacotherapeutics. S.Chand & Company Ltd. New Delhi.
5. R.S.Gaud & Dr. G.D.Gupta.Practical Pharmaceutics. CBS Publishers and Distributors, New Delhi
6. N.C.Choudhary and N.K.Gurbani, Pharmaceutical Chemistry.Vallabh Prakashan, Delhi.
7. N.K.Jain, Textbook of Professional Pharmacy. Vallabh Prakashan, Delhi.
8. B.M.Mithal., A text book of Pharmaceutical formulation. Vallabh Prakashan, Delhi.
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: **Practical**

Compulsory / अनिवार्य

: **Compulsory**

Particular / विवरण

Examination: 4 hours

I Medicated preparations:

12 Marks

(a) Aromatic waters (b) Solutions (c) Syrups (d) Lotions (e) Spirits (f) Elixirs,
(g) Liniments (h) Glycerites (i) Gargles (j) Mouthwashes (k) Inhalations (l) Emulsions (m)
Suspensions (n) Mucilages (o) Jellies (p) Infusions (q) Decoctions (r) Tinctures
(s) Milks and Magmas

II Volumetric Estimation:

12 Marks

Oxidation-Reduction titration: Estimation of Ferrous Sulphate in Mohr's salt using
(a) KMnO_4 (b) $\text{K}_2\text{Cr}_2\text{O}_7$

III Sulphonification, Iodine value of oil


12 Marks

IV Viva

06 Marks

V Practical record

08 Marks


30/3/2014