SEPTEMBER 1991

403

FIRST M.Pharm. DEGREE EXAMINATION, SEPTEMBER 1991

Special Papers

Specialisation B — Pharmaceutical Chemistry

Paper III — CHEMISTRY OF NATURAL PRODUCTS AND BIOGENESIS

(Common to Specialisation C — Pharmacognosy)

Time : Three hours. Maximum : 100 marks.

Answer any FOUR questions.
All questions carry equal marks.

1. Stating suitable examples, explain how the different chromatographic methods can be used to isolate, purify and identify drugs from natural sources.

2. (*a*) Discuss how traces technique is employed in the study of biosynthetic pathways.

(*b*) "Eventhough quinoline alkaloids are more structurally related to Anthranilic acid, they are biogenetially formed from Tryptophan". Explain.

3. Discuss the chemistry of tropane alkaloids.

4. (*a*) Classify terpenoids with suitable examples. Discuss the role of instrumental methods in their structure elucidation.

(*b*) Discuss the chemistry (including stereochemistry) of Menthol.

5 Write notes on any *three* :

(*a*) Hallucinogenic plants.

(*b*) N.M.R. spectroscopic studies of monosacharides.

(*c*) Phospholipids.

(*d*) Chemistry of streptomycin.

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[03]

MARCH 1992

FIRST M.Pharm. DEGREE EXAMINATION, MARCH 1992.

Branch B — Pharmaceutical Chemistry

Paper IV — CHEMISTRY OF NATURAL PRODUCTS AND BIOGENESIS

(Common to Specialisation - C — Pharmacognosy — Paper IV)

Time : Three hours. Maximum : 100 marks.

Answer any FOUR questions.

All questions carry equal marks.

1. (a) Discuss the methods of extraction, isolation and purification of opium alkaloids.

(b) Dsicuss the applications of U.V and I.R spectroscopy in the structure elucidation of terpenes.

2. Explain the methodology and technique employed in the elucidation of biogenetic pathways of drugs in plants and microorganisms.

3. Discuss the chemistry of cardiac glycosides.

4. (a) Explain the method of isolation and chemical properties of vitamin C.

(b) Give the general pathway of biogenesis of Schikimic acid. Mention its importance.

5. Write notes on :

(a) Amino acids.

(b) Sex hormones.

(c) Method of estimation of alkaloids in plant products.

(d) Preparation and uses of allergenic extracts.

[PR 457] **NOVEMBER 1993**

M.Pharm. DEGREE EXAMINATION

First Year

Special Papers

Specialisation B — Pharmaceutical Chemistry

CHEMISTRY OF NATURAL PRODUCTS AND BIO-GENESIS

(Common to specialisation B and C)

Time : Three hours. Maximum : 100 marks.

Answer any FOUR questions.

All questions carry equal marks.

1. Discuss the application of the following in the evaluation of natural drugs :

(a) Infrared spectroscopy.

(b) Nuclear magnetic resonance.

2. Write the structural formula of the following natural products. Give their method of isolation and estimation :

(a) Emetine.

(b) Digitoxin.

(c) Ephedrine.

3. How are the following produced commercially ? Give their method of estimation :

(a) Diosgenin.

(b) Sennosides.

4. Amino acids are considered to be the biogenetic precursors of alkaloids. Illustrate your answer with suitable examples.

Discuss the biogenesis of cholesterol.

5. Write short notes on any *two* of the following :

(a) Hallucinogenic and allergenic toxic plants.

(b) Glycosides.

(c) Volatile oils.

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[ND 282] **NOVEMBER 1994**

M.Pharm. DEGREE EXAMINATION.

(New Regulations)

Branch III — Pharmacognosy

BIOGENESIS AND CHEMISTRY OF NATURAL PRODUCTS

Time : Three hours Maximum : 100 marks

Answer any FOUR questions.

All questions carry equal marks.

1. Describe the general methods of isolation, purification and estimation of Alkaloids from a plant containing Alkaloids.

2. Describe the biogenesis of Indole alkaloids.

3. Describe the screening methods for hypoglycemic activity.

4. Describe the isolation and estimation of Sennosides and Quinine.

5. Describe the biogenesis of cardiac glycosides. Describe the biological method of estimation of Digoxin.

6. Describe the preparation of Tetracyclines.

[CB 311] **APRIL 1995**

M.Pharm. DEGREE EXAMINATION.

(New Regulations)

Branch III — Pharmacognosy

BIOGENESIS AND CHEMISTRY OF NATURAL PRODUCTS

Time : Three hours. Maximum : 100 marks.

Answer any FOUR questions.

All questions carry equal marks.

1. Describe the methods of Isolation of Diosgenin and Emetine. Describe the methods of standardisation.

2. Describe the Biogenesis of Tropane Alkalbids.

3. Describe the preparation of Insulin.

4. Describe the screening methods for cardiac activity.

5. Explain the methods of estimating Antibacterial activity.

6. Describe the method of preparation of morphine.

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[AK 312] **APRIL 1996**

M.Pharm. DEGREE EXAMINATION.

(New Regulations)

Branch III — Pharmacognosy

BIOGENESIS AND CHEMISTRY OF NATURAL PRODUCTS

Time : Three hours Maximum : 100 marks

Answer any FOUR questions.

All questions carry equal marks.

1. Write an account of the chemistry of sugars associated with cardiac glycosides. How are they helpful in the chemical detection and physiological action?

2. Describe the screening procedure for hypoglycemic activity on a compound you have isolated.

3. Compare and contrast the chemistry and action of tropane alkaloids obtained from solanaceae and Ery throxylaceae families.

4. What is the method of isolation of quinine from cinchona bark?

How do you estimate the Quinine content in the cinchona bark, and compare pharmacological activity of Quinine and Quinidine?

5. Give a general scheme of primary metabolic pathway, primary metabolites and the corresponding secondary metabolites formed.

How far are biogenetic studies useful in pharmacognosy?

6. Write the method of preparation of insulin and mention its standards.

OCTOBER 1996

M.Pharm DEGREE EXAMINATION

PK 208 (New Regulations)

Branch III - PHARMACOGNOSY

Paper II

BIOGENESIS AND CHEMISTRY OF NATURAL PRODUCTS

Time: Three hours Max.marks:100

Answer any FOUR questions

All questions carry equal marks

1. Describe the biogenetic pathway for Tropane alkaloids and Triterpeniods of pharmaceutical significance.

2. Describe the method of extraction on commercial scale of following phytoconstituents:

   a) Calcium sennosides

   b) Pectin

3. Give an account of screening methods used in establishing antifertility activity of herbal constituents.

4. Discuss the occurrence, chemistry biogenesis and methods of extraction and evaluation of Vinca alkaloids.

5. Describe the method of estimation of

   (a) Vitamin B_{12}

   (b) Folic acid

   (c) Digoxin

6. Write informative notes on the following:

   (a) Manufacture of Penicillin

   (b) Extraction of Tannic acid and its estimation

   (c) Assessment of anti-inflammatory activity of phytoconstituents.

APRIL 1997

M.Pharm. DEGREE EXAMINATION

(New Regulations)

MP 260

First Year

Branch III - Pharmacognosy

Paper III - BIOGENESIS AND CHEMISTRY OF NATURAL PRODUCTS

Time: Three hours Max.marks:100

Answer any FOUR questions

All questions carry equal marks

1. Describe the biogenetic pathway of reserpine and its estimation.

2. Describe the commercial production of

   (a) Atropine

   (b) Emetine

3. Describe the Screening methods for diuretic activity.

4. Describe the general methods of isolation, purification and estimation of a cardiac glycoside.

5. Describe the estimation of

   (a) Atropine

   (b) Scillaren - A

   (c) Vitamin C

6. Write briefly on:

   (a) Phytosynthesis

   (b) Corticosteroids

   (c) Tetracyclines.

OCTOBER 1997

M.Pharm. DEGREE EXAMINATION

(New Regulations)

MS 244

First year

Branch III - Pharmacognosy

Paper III - BIOGENESIS AND CHEMISTRY OF NATURAL PRODUCTS

Time: Three hours Max.marks:100

Answer any FOUR questions

All questions carry equal marks

1. Describe the industrial method of isolation and estimation of Diosgenin.

2. Describe the screening of natural products for their anti-inflammatory activity.

3. Describe the biogenetic pathway of Digoxin. Explain the standardisation method of Digoxin.

4. Describe the method of estimation of:

   (a) Vitamin A

   (b) Insulin

   (c) Oxytocin

5. Describe the general methods of extraction, isolation and purification of alkaloids.

6. Write notes on:

   (a) Natural source of tannic acid

   (b) Manufacture of Sennosides

   (c) Vitamin C.

[SV 276] **APRIL 1998**

M. Pharm. DEGREE EXAMINATION.

(New Regulations)

First Year

Branch III — Pharmacognosy

Paper III — BIOGENESIS AND CHEMISTRY OF NATURAL PRODUCTS

Time : Three hours Maximum : 100 marks

Answer any FOUR questions.

All questions carry equal marks.

1. Discuss the methods of isolation and purification of cardiac glycosides from natural sources. Give identification tests.

2. Discuss the methods of investigation of biogenetic pathways.

3. What are vitamins? What is their importance in metabolism? Give the sources for vitamin A, Folic acid and Vitamin B_{12}. Describe their uses.

4. Write notes on :

   (a) Digoxin.

   (b) Quinine.

   (c) Atropine.

5. Discuss the methods of screening natural products for

   (a) Anti inflammatory activity

   (b) Anti fertility activity.

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[KA 276] **OCTOBER 1999**

M.Pharm. DEGREE EXAMINATION.

(New Regulations)

First Year

Branch III — Pharmacognosy

Paper III — BIOGENESIS AND CHEMISTRY OF NATURAL PRODUCTS

Time : Three hours Maximum : 100 marks

Answer any FOUR questions.

All questions carry equal marks.

1. Mevalonate is an essential building block of terpenoids and steroids. Explain this statement.

2. Illustrate the role of I.R. in the structure elucidation of natural products.

3. Discuss the industrial method of isolation and estimation of the following natural products :

(a) Sennosides

(b) Quinine.

4. Discuss the chemical reactions used to prove the ring size and lactone structure in Ascorbic acid. Discuss the method used for the estimation of Folic acid.

5. Discuss the methods of screening natural products for :

(a) Cardiac activity

(b) Antiviral and antibacterial activity.

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[KB 276] **APRIL 2000**

M. Pharm. DEGREE EXAMINATION.

(New Regulations)

First Year

Branch III — Pharmacognosy

Paper III — BIOGENESIS AND CHEMISTRY OF NATURAL PRODUCTS

Time : Three hours Maximum : 100 marks

Answer any FOUR questions.

All questions carry equal marks.

1. Discuss the principle involved in the isolation of cardiac glycosides. Discuss the latest chromatographic techniques used for their separation.

2. Discuss the various techniques employed in the elucidation of biogenetic pathways.

3. Discuss the industrial method of isolation and estimation of the following natural products :

(a) Ephedrine

(b) Hesperidin.

4. Give the structures of four semisynthetic penicillins. Discuss the degradative study of penicillins. Discuss the SAR of tetracyclines.

5. Discuss the methods of screening of natural products for

(a) Antifertility activity

(b) Hypoglycemic activity.

6. Write short notes on :

(a) HPLC

(b) Vitamin C

(c) Industrial method of isolation and estimation of cinchona alkaloids 'Quinine'.

(d) Antiinflammatory activity.

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[KC 276] OCTOBER 2000

M.Pharm. DEGREE EXAMINATION.

(New Regulations)

First Year

Branch III — Pharmacognosy

Paper III — BIOGENESIS AND CHEMISTRY OF NATURAL PRODUCTS

Time : Three hours Maximum : 100 marks

Answer any FOUR questions.

All questions carry equal marks.

1. Outline the biogenetic hypothesis and give some strong evidence relating to quinoline alkaloids.

2. Name some important plant sources of cardiac glycosides. Discuss the method of isolation of cardiac glycosides along with its underlying chemistry.

3. Discuss the industrial method of isolation and estimation of the following natural products :

(a) Ephedrine.

(b) Hesperidin.

4. What is the importance of 'back bone' of a steroid? Give the general structure of corticosteroids and their nomenclature. Discuss their significance and give their medicinal uses.

5. Discuss the methods of screening natural products for :

(a) Hypoglycemic activity.

(b) Antineoplastic activity.

6. Write short notes on :

(a) Pharmacological screening.

(b) Isolation of Penicillin from strains of Pencillium Species.

(c) Isolation and Estimation of Sennosides.
