[KD 276] **APRIL 2001**

M.Pharmacy 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. (a) A new drug testing laboratory is being set up near an airport. The chief analyst is in need of a detailed description on the modern techniques used for the isolation, purification and estimation of morphine. As a specialist in the subject of pharmacognosy guide him in this regard.

(b) Describe the chemistry, isolation and estimation of corticosteroids. (25)

2. (a) Give the source, method of isolation and estimation of Digoxin.

(b) Write a note on the isolation, purification and estimation of penicillin. (25)

3. Describe the industrial method of isolation and estimation of diosgenin and ephedrine. (25)

4. Discuss the general screening methods for antifertility activity and antibacterial activity of drugs. (25)

5. (a) Describe in detail the techniques involved in the elucidation of biosynthetic pathways.

(b) Write a note on isoprenoid biosynthesis. (25)

6. Write short notes on : (25)

(a) Photosynthesis

(b) Vasopressin

(c) Vitamin A.

NOVEMBER 2001

[KE 276]

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. (a) A herbal drug manufacturer has supplied a sample of extract which they claim has diuretic activity. Considering yourself as a public analyst chalk out a scheme for testing the extract for its claim and write a report to the food and drugs inspectorate.

(b) Explain the general methods of screening natural products for psychopharmacological activity.(25)

2. (a) Give the industrial method of isolation and estimation of sennosides.

(b) The increase in price of cinchona bark has forced a herbal drug manufacturing unit to explore for new equivalents. A sample of a new drug stated to contain a substantial quantity of "quinine" has been supplied by this company for investigation. Considering yourself as the Head, Research and Development, give the industrial method you would follow to isolate and estimate quinine from the given sample. (25)

3. Give the methods of extraction, purification, separation, estimation and characterisation of cardiac glycosides. (25)

4. (a) Explain the techniques employed in the elucidation of biosynthetic pathways.

(b) Write a note on isoprenoid biosynthesis. (25)

5. (a) Briefly describe the preparation, purification and estimation of insulin.

(b) Write a note on semisynthetic penicillins. (25)

6. Write short notes on : (25)

(a) Stereochemistry of cholesterol.

(b) Tetracyclines

(c) Folic acid

(d) Vinblastin.

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[KE 297] **NOVEMBER 2001**

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch III — Pharmacognosy

Paper III — BIOGENESIS AND CHEMISTRY OF NATURAL PRODUCTS

Time : Three hours Maximum : 100 marks

Answer ALL questions.

All questions carry equal marks.

1. How do you screen natural products for :
   (a) Cardiac activity
   (b) Hypoglycemic activity.

2. (a) Discuss the chemistry of Cardiac glycosides in general. (15)

   (b) Write a suitable note on the isolation of Penicillin. (10)

3. (a) Describe the preparation and chemistry of Corticosteroids. (15)

   (b) Give the structural elucidation of Digoxin and Reserpine. (10)

4. Write short notes on any FIVE : (5 × 5 = 25)
   (a) Preparation of Insulin
   (b) Ouabain
   (c) Vasopressin
   (d) Vinblastine
   (e) Folic acid
   (f) Isolation and estimation of Pectin.

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[KH 276] SEPTEMBER 2002

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. (a) A herbal drug manufacturer has supplied a sample of extract which they claim has cardiac activity. considering yourself as a public analyst chalk out a scheme for testing the extract for its claim and write a report to the food and drugs inspectorate.

(b) Explain the general methods of screening natural products for anti-inflammatory activity. (15 + 10 = 25)

2. (a) Give the industrial method of isolation and estimation of pectin.

(b) Give the industrial method of isolation and estimation of tannic acid. (13 + 12 = 25)

3. Give the method of extraction, purification, separation, estimation and characterisation of vitamin A. (25)

4. (a) Explain light and dark reactions of photosynthesis.

(b) Write a note on aromatic biosynthesis. (15 + 10 = 25)

5. (a) Briefly describe the preparation, purification and estimation of Vinblastin.

(b) Write a note on Oxytocin. (15 + 10 = 25)

6. Write short notes on :

(a) Folic acid

(b) Classification of glycosides

(c) Extraction of volatile oils. (5 + 10 + 10 = 25)

[KH 297] **SEPTEMBER 2002**

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch III — Pharmacognosy

Paper III — BIOGENESIS AND CHEMISTRY OF NATURAL PRODUCTS

Time : Three hours Maximum : 100 marks

Answer ALL questions.

All questions carry equal marks.

(4 × 25)

1. What is meant by proteins? Give an account of the isolation, purification and estimation of Oxytocin. (25)

2. Discuss the chemistry of Alkaloids. Write a note on biosynthesis, isolation and purification of Ergometrine. (25)

3. Give the general methods of screening of natural products for Hypoglycemic Activity. (25)

4. Write notes on :

(a) Vin blastin (8)

(b) Folic acid (8)

(c) Isolation and estimation of Hesperidin. (9)

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[KI 297] APRIL 2003 Sub. Code : 1009

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch III — Pharmacognosy

Paper III — BIOGENESIS AND CHEMISTRY OF NATURAL PRODUCTS

Time : Three hours Maximum : 100 marks

Answer ALL questions.

All questions carry equal marks.

1. Explain modern techniques used for the isolation of active plant constituents. (25)

2. Explain Aromatic Biosynthesis and add a note on biosynthesis of prephenic acid. (25)

3. Write note on :

(a) Semisynthetic penicillins isolation. (10)

(b) Occurrence and chemistry of Vitamin C. (15)

4. Explain the industrial method of isolation and estimation of quinine and atropine. ($12\frac{1}{2} + 12\frac{1}{2}$)

OCTOBER 2003

[KJ 297] **Sub. Code : 1009**

M.Pharm. DEGREE EXAMINATION.

(Revised 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. Explain the methods of extraction including modern techniques used for the isolation, estimation and characterisation of plant active constituents.

(10 + 10 + 05 = 25)

2. Explain the general methods of screening natural products for antineoplastic and diuretic activity.

(15 + 10 = 25)

3. Give the industrial method of isolation and estimation of Pectin, Tannic acid and sennosides.

(08 + 08 + 09 = 25)

4. Explain the chemistry, biosynthesis, isolation and estimation by biological methods of cardiac glycosides.

(25)

[KK 297] APRIL 2004 Sub. Code : 1009

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch III — Pharmacognosy

Paper III — BIOGENESIS AND CHEMISTRY OF NATURAL PRODUCTS

Time : Three hours Maximum : 100 marks

Sec. A & B : Two hours and Forty minutes Sec. A & B : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions.

SECTION A

Long Essay : (2 × 15 = 30)

1. (a) Explain the role of modern techniques in purification and characterisation of active plant constituents. (10)

(b) Give the industrial method of isolation and estimation of sennosides. (5)

2. (a) Explain the chemistry, biosynthesis, isolation and estimation of cardiac glycosides. (10)

(b) Write a note on screening of natural products for cardiac activity. (5)

SECTION B

Short notes : (10 × 5 = 50)

3. Explain the biogenesis of isoprenoid compounds.

4. What is the source of vasopressin and oxytocin? Explain their production.

5. Give examples of steroidal saponins. Write a note on their biogenesis.

6. Classify vitamins with their sources and explain their structures.

7. Explain the screening of antineoplastic agent.

8. Explain the methods of estimation of quinine and ephedrine.

9. Give a list of hypoglycemic agent from natural source. Which is the most popular method for screening of hypoglycemic activity?

10. Write the structures of the following compounds and their synthetic analogs :

(a) Vinblastine

(b) Morphine.

11. What are semisynthetic penicillins? Give two examples and explain their production.

12. Explain the role of autoradiography in elucidation of biosynthetic pathway.

AUGUST 2004

[KL 297] **Sub. Code : 1009**

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch III — Pharmacognosy

Paper III — BIOGENESIS AND CHEMISTRY OF NATURAL PRODUCTS

Time : Three hours Maximum : 100 marks

Sec. A & B : Two hours and forty minutes Sec. A & B : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions.

SECTION A — (2 × 15 = 30 marks)

1. Describe the industrial method of isolation and estimation of diosgenin and ephedrine.

2. Explain in detail isoprenoid biosynthesis.

SECTION B — (10 × 5 = 50 marks)

Write short notes on :

3. Biological methods of estimation of Antibiotics.

4. Estimation of vitamin A.

5. Photosynthesis.

6. Industrial method of isolation of pectin.

7. Pharmacological screening of herbal drugs for anti fertility activity.

8. Industrial method of estimation of quinine.

9. Anti inflammatory activity.

10. Write a note on aromatic biosynthesis carbohydrate utilization.

11. Explain general methods of screening natural products for Diuretic.

12. Evaluate penicillin by biological method.

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March 2009

[KU 323] **Sub. Code: 2859**

M.PHARM. DEGREE EXAMINATION

(Regulations 2006)

Candidates admitted from 2006-2007 onwards

FIRST YEAR

Branch III – PHARMACOGNOSY

Paper III – BIOGENESIS AND CHEMISTRY OF NATURAL PRODUCTS

Q.P. Code : 262859

Time : Three hours **Maximum : 100 marks**

Answer All questions

I. Essay Questions : **(3 x 20 = 60)**

1. Write all the methods for screening Antineoplastic activity.

2. What are antibiotics? Discuss the:
   a) Chemistry and biosynthesis of tetra cyclines.
   b) Explain the industrial methods of isolation of diosgenin.

3. a) Define and classify Alkaloids, Discuss the structure of morphine and its synthetic analogues.
   b) Industrial method of isolation and estimation of quinine.

II. Write Short Notes : **(8 x 5 = 40)**

1. Isoprenoid Biosynthesis.
2. Preparation of oxytocin.
3. Isolation and estimation of pectin.
4. Preparation of corticosteroids.
5. Biosynthesis of pencillin.
6. Structure of Vitamin C.
7. Screening of natural products for antiulcer activity.
8. Preparation of Insulin.

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September 2009

[KV 323] **Sub. Code: 2859**

M.PHARM. DEGREE EXAMINATION

(Regulations 2006)

Candidates admitted from 2006-2007 onwards

FIRST YEAR

Branch III – PHARMACOGNOSY

Paper III – BIOGENESIS AND CHEMISTRY OF NATURAL PRODUCTS

Q.P. Code : 262859

Time : Three hours **Maximum : 100 marks**

Answer All questions

I. Essay Questions : **(3 x 20 = 60)**

1. Describe the occurrence, chemistry, isolation and estimation of any two vitamins you have studied.

2. a) Explain the techniques employed in the elucidation of biosynthetic pathways.
   b) Detail the biosynthesis, isolation and purification of atropine.

3. Discuss the various methods of screening natural products for psychopharmacological activity.

II. Write Short Notes : **(8 x 5 = 40)**

1. Photosynthesis.
2. Industrial methods of isolation of quinine.
3. Estimation of sennosides.
4. Estimation of vitamin C.
5. Aromatic biosynthesis.
6. General methods of screening natural products for anti-inflamatory activity.
7. Chemistry of cortocosteroids.
8. Isolation of forskoli

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March 2010

[KW 323] **Sub. Code: 2859**

M.PHARM. DEGREE EXAMINATION

(Regulations 2006)

Candidates admitted from 2006-2007 onwards

FIRST YEAR

Branch III – PHARMACOGNOSY

Paper III – BIOGENESIS AND CHEMISTRY OF NATURAL PRODUCTS

Q.P. Code : 262859

Time : Three hours **Maximum : 100 marks**

Answer All questions

I. Essay Questions : **(3 x 20 = 60)**

1. Describe the salient features of the biosynthesis of active plant principles via the shikimic acid pathway.

2. Explain the industrial methods of isolation and estimation of digoxin and diosgenin.

3. Discuss the various methods of screening of invitro antioxidant activity of natural products and detail how you will study their structure activity relationship.

II. Write Short Notes : **(8 x 5 = 40)**

1. Isoprenoid biosynthesis.
2. Preparation of insulin.
3. Chemistry of morpline and its synthetic analogues.
4. Stereochemistry of cholesterol.
5. Industrial methods of isolation of pectin.
6. General methods of screening natural products for antiulcer activity.
7. Semisynthetic penicilins.
8. Biosynthesis of cardiac glycosides.

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September 2010

[KX 323] **Sub. Code: 2859**

M.PHARM. DEGREE EXAMINATION

(Regulations 2006)

Candidates admitted from 2006-2007 onwards

FIRST YEAR

Branch III – PHARMACOGNOSY

Paper III – BIOGENESIS AND CHEMISTRY OF NATURAL PRODUCTS

Q.P. Code : 262859

Time : Three hours **Maximum : 100 marks**

Answer All questions

I. Essay Questions : **(3 x 20 = 60)**

1. Describe any two methods of screening natural products for their anti inflammatory activity.

2. Write in detail about the occurrence, chemistry, biosynthesis, isolation and purification of Penicillin.

3. How industrially the following phytoconstituents are isolated and estimated:- a) Atropine b) Quinine.

II. Write Short Notes : **(8 x 5 = 40)**

1. Isolation of Hesperidin.
2. Screening of Diuretic activity.
3. Biosynthesis of amino acids by Sikimic acid pathway.
4. Tracer Techniques.
5. Estimation of Sennosider.
6. Estimation of Forskolin.
7. Photosynthesis.
8. Screening of anti ulcer activity.

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FEBRUARY 2005

[KM 297] **Sub. Code : 1009**

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch III — Pharmacognosy

Paper III — BIOGENESIS AND CHEMISTRY OF NATURAL PRODUCTS

Time : Three hours Maximum : 100 marks

Sec. A & B : Two hours and forty minutes Sec. A & B : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions.

SECTION A — (2 × 15 = 30 marks)

Long Essay :

1. Give methods of extraction, purification, separation, estimation and characterisation of tropane alkaloids.

2. Explain the preparation, purification and estimation of vitamins.

SECTION B — (10 × 5 = 50 marks)

Write Short Notes on :

3. Estimation of Epherine.

4. Cardiac glycosides.

5. Vin blastine.

6. Shikimic acid pathway.

7. Synthetic analogs of morphine.

8. Folic acid.

9. Isolation of hesperidin.

10. Explain the characterisation of plant active constituents.

11. Give the industrial method of estimation of pectin.

12. Screening of nature products of cardiac activity.

AUGUST 2005

[KN 297] Sub. Code : 1009

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch III — Pharmacognosy

Paper III — BIOGENESIS AND CHEMISTRY OF NATURAL PRODUCTS

Time : Three hours Maximum : 100 marks

Theory : Two hours and forty minutes Theory : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions.

I. Long Essay : (2 × 15 = 30)

1. Describe the industrial method of isolation and estimation of Sennosides and Atropine.

2. Explain in detail different techniques employed in the elucidation of biosynthetic pathways.

II. Write Short notes on : (10 × 5 = 50)

1. Atropine biosynthesis.

2. Industrial method of isolation of Tannic acid.

3. Screening methods for antifertility activity.

4. Explain general methods of screening natural products for antibacterial activity.

5. Explain in general the chemistry of cardiac glycosides.

6. Explain the chemistry of Corticosteroids.

7. Industrial method of isolation of Hesperidin.

8. Explain pharmacological screening of herbal drugs for antineoplastic activity.

9. Explain shikimic acid pathway and give its significance.

10. Explain biosynthesis of Ergometrine.

MARCH 2006

[KO 297] **Sub. Code : 1009**

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch III — Pharmacognosy

Paper III — BIOGENESIS AND CHEMISTRY OF NATURAL PRODUCTS

Time : Three hours — Maximum : 100 marks

Theory : Two hours and forty minutes — Theory : 80 marks

M.C.Q. : Twenty minutes — M.C.Q. : 20 marks

Answer ALL questions.

I. Long Essay : (2 × 15 = 30)

(1) Explain the process of photosynthesis. Name and give structures of different photosynthetic pigments.

(2) How do you plan for screening of an unknown plant for its pharmacological activity.

II. Write Short notes on : (10 × 5 = 50)

(1) Give the methods for isolation and estimation of sennosides.

(2) Explain the chemistry of corticosteroids

(3) Explain the preparation of semi synthetic penicillins.

(4) What are the modern method of characterisation of active plant constituents?

(5) Give the general method of screening of neoplastic agents

(6) Explain the occurrence, chemistry and biosynthesis of cardiac glycosides.

(7) Explain the industrial method of isolation and estimation of pectics.

(8) Explain the preparation of vasopressin and oxytocin.

(9) Explain the estimations of vitamins

(10) What are antifertility agents? How do you screen them?

SEPTEMBER 2006

[KP 297] **Sub. Code : 2817**

M.Pharm. DEGREE EXAMINATION.

First Year

(Revised Regulations)

Branch III – Pharmacognosy

Paper III — BIOGENESIS AND CHEMISTRY OF NATURAL PRODUCTS

Time : Three hours Maximum : 100 marks

Theory : Two hours and forty minutes Theory : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions.

I. Long Essay : (10 + 10 = 20)

1. (a) Chemistry of corticosteroids

(b) Give the method of estimation of diosgenin.

2. Give methods of extraction, purification, separation, estimation and characterisation of opium alkaloids. (15)

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

(a) Sennosides

(b) Pectin. (8 + 7 = 15)

II. Write short notes on : (6 × 5 = 30)

1. Modern techniques used for the isolation of plant active constituents.

2. Shikimic acid pathway.

3. Screening of natural products of Anti-inflammatory activity.

4. Estimation of Quinine

5. Semi synthetic penicillins

6. Vitamin B_{12}

MARCH 2007

[KQ 297] **Sub. Code : 2817**

M.Pharm. DEGREE EXAMINATION.

First Year

(Revised Regulations)

Branch III — Pharmacognosy

Paper III — BIOGENESIS AND CHEMISTRY OF NATURAL PRODUCTS

Time : Three hours Maximum : 100 marks

Theory : Two hours and forty minutes Theory : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions.

Answer the following.

I. Long Essay : (1 × 20 = 20)

1. Discuss the modern techniques used for the isolation, estimation and characterisation of active plant constituents.

II. Long Essay : (2 × 15 = 30)

1. Describe the occurrence, chemistry, biosynthesis, isolation and estimation of morphine and its synthetic analogs.

2. Explain the industrial method of isolation and estimation of Quinine.

III. Write short notes on : (6 × 5 = 30)

1. Techniques employed in the elucidation of biosynthetic pathways.

2. General methods of screening natural products for hypoglycemic activity.

3. Industrial method of isolation of sennosides.

4. General method of screening natural products for antiviral and anti bacterial activity.

5. Bio synthesis of cardiac glycosides.

6. Estimation of Vitamin "C".

MARCH 2007

[KQ 323] **Sub. Code : 2859**

M.Pharm. DEGREE EXAMINATION.

First Year

(Regulation 2006)

Branch III — Pharmacognosy

Paper III — BIOGENESIS AND CHEMISTRY OF NATURAL PRODUCTS

Time : Three hours | Maximum : 100 marks

Theory : Two hours and forty minutes | Theory : 80 marks

M.C.Q. : Twenty minutes | M.C.Q. : 20 marks

Answer ALL questions.

I. Long Essay :

1. (a) Describe the general methods for screening the natural products for Anti inflamatory and Diuretic activity.

(b) Give the Industrial methods of isolation and estimation of Digokin and Emetin. (10 + 10 = 20)

2. Chemistry of Alkaloids. (15)

3. Give the methods of extraction, purification, separation, estimation and characterisation of cardiac glycosides. (15)

II. Short notes : (6 × 5 = 30)

1. Shikimic acid pathway

2. Chemistry and stereochemistry of cholesterol

3. Preparation of corticosteriods.

4. Estimation of Hesperidia.

5. Screening for hepatoprotective activity.

6. Preparation of Insulin.

SEPTEMBER 2007

[KR 323] **Sub. Code : 2859**

M. Pharm. DEGREE EXAMINATION.

(Regulation 2006)

Branch III — PHARMACOGNOSY

Paper III — BIOGENESIS AND CHEMISTRY OF NATURAL PRODUCTS

Time : Three hours Maximum : 100 marks

Theory : Two hours and forty minutes Theory : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL questions.

I. Long Essay :

1. Chemistry of steroids. (20)

2. Industrial methods of Isolation and estimation of Forskolia and Diosgenia. (15)

3. Give the general methods of screening of Anti-inflammatory activity and cardiac activity. (15)

II. Short notes : (6 × 5 = 30)

1. Hepatoprotective activity.

2. Isolation of penicillin.

3. Vitamin B_{12}.

4. Cardiac glycosides.

5. Chemistry of reserpine.

6. Purification and estimation of vinblastine.

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September 2008

[KT 323] **Sub. Code : 2859**

M.Pharm. DEGREE EXAMINATION.

First Year

(Regulation 2006)

Branch III — Pharmacognosy

Paper III — BIOGENESIS AND CHEMISTRY OF NATURAL PRODUCTS

Q.P. Code : 262859

Time : Three hours Maximum : 100 marks

Answer ALL questions.

I. Essay questions : (3 × 20 = 60)

1. Define glycosides. What are cardiac glycosides. Differentiate cardenolides and bufadienolides by chemical tests. Give chemical description of digoxin and seillarin-A with their biogenesis.

2. (a) Discuss the different techniques involved in the elucidation of biosynthetic pathways of natural products.

(b) Write the biogenesis of cholesterol.

3. Describe the different methods for screening hepatoprotective and cardiac activity.

II. Short notes : (8 × 5 = 40)

1. Industrial method of isolation and estimation of diosgenein.

2. Preparation of vasopressin and its estimation.

3. Chemistry of glucocorticoids.

4. Screening of natural products for antifertility activity.

5. Isolation, purification and estimation of vitamin-A.

6. Biosynthesis of Reserpine.

7. Isolation and estimation of hesperidin.

8. Screening of natural products for diuretic activity.

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MAY 2011

[KY 323] **Sub. Code: 2859**

M.PHARM. DEGREE EXAMINATION

(Regulations 2006)

Candidates admitted from 2006-2007 onwards

FIRST YEAR

BRANCH III – PHARMACOGNOSY

PAPER III – BIOGENESIS AND CHEMISTRY OF NATURAL PRODUCTS

Q.P. Code : 262859

Time : Three hours **Maximum : 100 marks**

Answer All questions

I. Essay Questions : **(3 x 20 = 60)**

1. Write an account on the chemistry, Biosynthesis and estimation of Hypericin.

2. Write a detail note on the industrial method of isolation and estimation of Forskolin and Tannic acid.

3. Write a detail note on the Biological evaluation of plant products for Cardiac activity.

II. Write Short Notes : **(8 x 5 = 40)**

1. Photosynthesis and its significance.
2. Isoprenoid biosynthesis.
3. Chemistry of Ascorbic acid.
4. Isolation of Hydroxy citric acid.
5. Screening for Diuretic activity.
6. Chemistry of Peruvoside.
7. Screening for Antiulcer activity.
8. Chemistry of Vasopressin.

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