APRIL 2001

[KD 274]

M.Pharmacy DEGREE EXAMINATION.

(New Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper IV — NATURAL PRODUCTS OF MEDICINAL INTEREST

Time : Three hours Maximum : 100 marks

Answer any FOUR questions.

All questions carry equal marks.

(a) Explain with examples how the following techniques are useful in the structural studies of natural products.

(i) IR

(ii) NMR

(iii) MS.

(b) Mention the general chemical tests to identify alkaloids and steroids. (25)

2. (a) Discuss the chemistry of Thiamine.

(b) How is Vitamin C commercially prepared? (25)

3. Explain the biogenetic pathways leading to the formation of Ergot alkaloids. Write a note on the chemistry of any one Ergot alkaloid. (25)

4. (a) Explain the mechanism of action, SAR and clinical uses of cardiac glycosides.

(b) Elucidate the structure of Cholesterol. (25)

5. Discuss the methods of purification of proteins. Explain how the primary structure of proteins is established by end group analysis. Write a note on the chemistry and uses of Insulin. (25)

6. Write notes on the following : (25)

(a) Semi synthetic penicillins

(b) Chemistry and biological importance of nucleosides

(c) Antifungal antibiotics

(d) Chemistry of Cortisone.

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[KD 295] **APRIL 2001**

M.Pharmacy DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper IV — NATURAL PRODUCTS OF MEDICINAL INTEREST

Time : Three hours Maximum : 100 marks

Answer ALL the questions.

All questions carry equal marks.

1. (a) Discuss the various methods of isolation and separation of plant constituents.

(b) Discuss the chemistry of Atropine. (25)

2. Discuss the different methods which are used to ascertain N-terminal and C-terminal amino acid residues in the investigation of molecular structure of proteins. How are they useful in determining the sequence of amino acids in insulin? (25)

3. What are the chief alkaloids of Opium? How are they isolated? Give the analytical and degradative evidences in support of Morphine structure. (25)

4. a) Discuss the chemistry of Penicillins.

b) Outline a method of synthesis for Penicillin.

c) Explain the chemistry and significance of semisynthetic Penicillins.

[KE 274] **NOVEMBER 2001**

M.Pharm. DEGREE EXAMINATION.

(New Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper IV — NATURAL PRODUCTS OF MEDICINAL INTEREST

Time : Three hours Maximum : 100 marks

Answer any FOUR questions.

All questions carry equal marks.

1. Describe the general methods of isolation of plant constituents and the chemical tests to identify them. Explain briefly the principle involved in the following separation techniques :

(a) GLC (b) HPLC (c) Counter current distribution. (25)

2. What are alkaloids? Discuss the structural elucidation of Atropine including its synthesis. Mention its medicinal uses. (25)

3. (a) Classify vitamins with examples. Discuss the chemistry of Ascorbic acid.

(b) How is Vitamin A_1 synthesized from beta–ionone? (25)

4. (a) Describe the methods employed in end group analysis of a polypeptide.

(b) Write the chemistry and medicinal uses of oxytocin. (25)

5. What are antibiotics? Classify them with examples based on their chemical nature. Discuss in detail the chemistry of beta–lactam antibiotics. Write the structures of two each of new semi synthetic penicillins and cephalosporins. (25)

6. Write notes on the following : (25)

(a) SAR of Cardiac glycosides

(b) Chemistry of nucleotides

(c) Isoprene rules

(d) Stereochemistry of cholesterol.

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[KE 295] NOVEMBER 2001

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper IV — NATURAL PRODUCTS OF MEDICINAL INTEREST

Time : Three hours Maximum : 100 marks

Answer ALL questions.

All questions carry equal marks.

1. (a) Describe the various biogenetic pathways in the production of alkaloids. (10)

(b) Give the structures and medicinal uses of any two of the vinca alkaloids and elucidate the structure of any one of them. (15)

2. (a) Define steroids. Give the chemical structure and uses of cortisol, betamethasone, aldosterone, cartexalone cortisone and dexamethasone. (10)

(b) How do you convert cholesterol and ergosterol to any one cortisol harmone? (15)

3. (a) Discuss the chemistry of nucleotides and coenzymes. (6)

(b) Give the chemical structure of any five antiviral drugs and give the preparation of any one of them. (9)

(c) Describe the chemistry of penicillins and cephalosporins with examples. (10)

4. Write short notes on the following : (5 × 5 = 25)

(a) Antibacterial Antibiotics

(b) Chemistry of Nicotinomides

(c) Importance of Oxytocin

(d) Steriochemistry of Cholesterol

(e) Use of GLC in structural studies.

[KH 295] **SEPTEMBER 2002**

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper IV — NATURAL PRODUCTS OF MEDICINAL INTEREST

Time : Three hours Maximum : 100 marks

Answer ALL questions.

All questions carry equal marks.

1. (a) Outline the general procedure for the extraction and isolation of active principles from plant sources. (13)

(b) Discuss the application of infra red and proton magnetic resonance spectroscopy in the structural studies on natural products. (6 + 6)

2. (a) How do semi synthetic penicillins differ from the natural ones? Describe the therapeutic advantages of the former over the latter.

(b) What are amino glycoside antibiotics? Give the structures of any three such compounds and discuss in detail the chemistry and uses of any one of them.

(c) Give an account of the salient chemical features and therapeutic uses of Grieseofulvin. (5 + 15 + 5)

3. Give an account of the chemistry, commercial preparation and biological role of

(a) Thiamine

(b) Vitamin D. (12 + 13)

4. Write notes on the following :

(a) Application of Kuhn–Roth methyl side chain determination in Vitamin A

(b) Nucleosides

(c) Cardiac glycosides obtained from squill. (8 + 8 + 9)

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[KI 295] APRIL 2003 Sub. Code : 1007

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper IV — NATURAL PRODUCTS OF MEDICINAL INTEREST

Time : Three hours Maximum : 100 marks

Answer ALL questions.

All questions carry equal marks.

1. (a) Outline the methods adopted in the isolation of alkaloids. Discuss the elucidation of the structure of reserpine.

(b) Write a note on chiral separation employing HPLC methods. (15 + 10)

2. (a) What are antibiotics? Explain what you understand by the terms first generation, second generation of antibiotics. Write notes on the following :

(i) Antifungal antibiotics

(ii) Semisynthetic penicillins.

(b) Discuss the chemistry of corticosteroids and their structure activity relationships. (15 + 10)

3. (a) Explain with examples the applications of the following in elucidating the structures of natural products :

(i) Mass spectroscopy

(ii) Optical rotatory dispersion

(b) Write a note on purification of proteins. (15 + 10)

4. (a) Explain in details the methods used with regard to end group analysis of polypeptide.

(b) Describe the preparations of the following :

(i) Insulin

(ii) Vasopressin. (10 + 15)

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OCTOBER 2003

[KJ 295] **Sub. Code : 1007**

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper IV — NATURAL PRODUCTS OF MEDICINAL INTEREST

Time : Three hours Maximum : 100 marks

Answer ALL questions.

All questions carry equal marks.

$(4 \times 25 = 100)$

1. (a) Enumerate the various classes of secondary plant metabolites of clinical importance. Describe the colour reactions that are useful in establishing their presence in the plant extracts. (12)

(b) Give an account of the utility of proton magnetic resonance in the structural investigations on natural products. (13)

2. (a) Describe the classification of alkaloids based on their chemical features giving examples. (8)

(b) Discuss in detail the chemistry and medicinal uses of cephalosporins. (9)

(c) Give an account of the preparation and biological properties of Insulin. (8)

3. Give an account of any TWO of the following :

(a) General constitution of ergot alkaloids and their inter relationships

(b) Preparation, chemistry and medicinal uses of corticosteroids.

(c) Biosynthetic pathways of acetogenins.

$(2 \times 12\frac{1}{2})$

4. Give an account of the following :

(a) Chemistry and biological activity of Digitalis glycosides. (9)

(b) General methods adopted for degradative studies on polypeptides and proteins. (8)

(c) Chemistry of vinca alkaloids. (8)

[KK 295] APRIL 2004 Sub. Code : 1007

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper IV — NATURAL PRODUCTS OF MEDICINAL INTEREST

Time : Three hours | Maximum : 100 marks

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

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

Answer ALL questions.

Your answer should be specific to the questions asked.

Give structures and molecular formulae wherever necessary.

SECTION A

Long Essay : (2 × 15 = 30)

1. How do you establish the following in cholesterol?
   (a) Position of two angular methyl groups
   (b) Positions of hydroxyl group and the double bond
   (c) Nature and position of side chain.

2. Explain the advantages of semisynthetic penicillins and cephalosporins over natural penicillins.

SECTION B

Short answers : (10 × 5 = 50)

3. Give an account of antifungal antibiotics.

4. Explain the general method of isolation of alkaloids.

5. Explain briefly the chemistry of reserpine.

6. Give the commercial preparation of cyanocobalamin (or) thiamine.

7. Explain the chemistry of nucleotides and nucleosides.

8. Give structures and examples of cardenotides and butadienotides.

9. Explain the applications of HPLC and GLC with special reference to plant constituents.

10. Explain the chemistry of oxytocin.

11. Give an account of chemistry of opium alkaloids with their medicinal uses.

12. Outline the synthesis of cortisone.

[KL 295] AUGUST 2004 Sub. Code : 1007

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper IV — NATURAL PRODUCTS OF MEDICINAL INTEREST

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.

Your answer should be specific to the questions asked.

Give structures and molecular formulae wherever necessary.

SECTION A — (2 × 15 = 30 marks)

1. (a) Discuss the general methods for the isolation and separation of glycosides. (6)

(b) Describe the different pathways of biosynthesis of alkaloids. (9)

2. Mention the objectives of preparing semi synthetic penicillins. Illustrate how these objectives are fulfilled by the derivatisation of 6-amino penicillanic acid in various ways. (15)

SECTION B — (10 × 5 = 50 marks)

3. Explain how O-methyl groups and N-methyl groups are estimated in natural products.

4. What are Beta lactam antibiotics? Give their classification mentioning examples and structures.

5. Chemistry and biological activity of digitalis glycosides.

6. General methods adopted for degradative studies on polypeptides and proteins.

7. Chemistry of vinca alkaloids.

8. Chemistry and commercial preparation of Riboflavine.

9. Preparation of cortico steroids.

10. Write a note on the purification of proteins.

11. Structure of HIV–I virus.

12. Explain the preparation of Insulin.

FEBRUARY 2005

[KM 295] **Sub. Code : 1007**

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper IV — NATURAL PRODUCTS OF MEDICINAL INTEREST

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.

Your answer should be specific to the questions asked.

Give structures and molecular formulae wherever necessary.

SECTION A — (2 × 15 = 30 marks)

1. Classify Adernocorticotropic hormones? Explain the chemistry of cortisone. How do you establish the position of secondary hydroxyl group in cortisone with reactions.

2. Classify the β-lactum antibiotics. Explain the chemistry and degradation of pencillins. Give a brief account for the development of synthetic pencillins over natural pencillins.

SECTION B — (10 × 5 = 50 marks)

3. Explain briefly the chemistry of Vinca Alkaloids.

4. Explain any one method for amino-end degradation of polypeptides.

5. Explain the isolation and separation of opium alkaloids.

6. Write the differences between Cardienolides and Bufa dienolides and enumerate some cardienolide and Bufa diemolide glycosides with examples.

7. Explain the constitution of nucleoside containing purine bases.

8. Explain the physiological function of Vitamin-A and explain the method of synthesis of Vitamin-A from β-Ionone.

9. Explain the application of H'NMR for the structural studies of plant constituents.

10. Outline the synthesis of Riboflavin.

11. Explain briefly about amino glycoside antibiotics.

12. Explain the biogenetic path way for papaverine.

[KN 295] AUGUST 2005 Sub. Code : 1007

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper IV — NATURAL PRODUCTS OF MEDICINAL INTEREST

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.

Your answer should be specific to the questions asked.

Give structures and molecular formulae wherever necessary.

I. Long Essay : (2 × 15 = 30)

1. (a) Outline the method of isolation of reserpine from Chinchona Bark. Discuss the chemistry and structure of reserpine. (10)

(b) Briefly discuss the biogenetic hypotheses of alkaloids. (5)

2. (a) Discuss the chemistry and stereo chemistry of important cardenolides. (9)

(b) Outline the synthesis of progesterone from diosgenin. (6)

II. Short notes : (10 × 5 = 50)

1. Chemistry and synthesis of coenzyme A.

2. Chemistry and synthesis of folic acid.

3. Outline the isolation and chemistry of oxytocin.

4. Discuss briefly the degradative studies and end group analysis of proteins.

5. Briefly discuss the isolation and chemistry of papaverine.

6. Explain the chemistry of Beta lactam antibiotics with special reference to semisynthetic penicillins.

7. Outline the synthesis of guanine and thymine.

8. Discuss the application of NMR in structural studies of natural products.

9. Discuss the chemistry of important anti viral antibiotics.

10. Explain the synthesis of Vit. A from citral.

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[KO 295] MARCH 2006 Sub. Code : 1007

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper IV — NATURAL PRODUCTS OF MEDICINAL INTEREST

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.

Your answer should be specific to the questions asked.

Give structures and molecular formulae wherever necessary.

I. Long Essay : (2 × 15 = 30)

1. Explain the biogenetic pathway of indole alkaloids.

2. Classify the proteins. Explain the methods for the determination of C-terminal and N-terminal of the polypeptides.

II. Short notes : (10 × 5 = 50)

(1) How do you determine the position of angular methyl groups in cholesterol?

(2) How do you isolated vinca alkaloids?

(3) Explain the applications of HPLC in the isolation of plant constituents?

(4) How do you synthesize cephalosporins?

(5) Discuss the role of 6-APA in the production of Semi-Synthetic penicillins.

(6) Write the commercial method of preparation of cyanocobalamine.

(7) Explain the chemistry of Atropine.

(8) Write the applications of MS in the structural elucidation of natural products.

(9) Write a note on the significance of cardiac glycosides?

(10) How do you synthesize Nicotiamide?

SEPTEMBER 2006

[KP 295] **Sub. Code : 2813**

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper IV — NATURAL PRODUCTS OF MEDICINAL INTEREST

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.

Your answer should be specific to the questions asked. Give structure and molecular formulae wherever necessary.

I. Long Essay :

1. (a) Briefly outline the chemistry of newer cephalosporins.

(b) Explain the isolation and constitution of ergot alkaloids. (10 + 10 = 20)

2. Discuss the isolation and purification of reserpine. Outline the chemistry, elucidation structure and synthesis of reserpine. (15)

3. Discuss the isolation and separation of Digoxin glycoside. Briefly outline the chemistry and stereochemistry of cardienolides and Bufadienolides. (15)

II. Short Notes : (6 × 5 = 30)

1. Briefly explain the application of mass spectra for the structural studies of plant constituents giving suitable example.

2. Discuss the biogenetic hypothesis of atropine.

3. Discuss briefly the isolation of diosgenin and its conversion into progesterone.

4. Outline the steps involved in the preparation and purification of Insulin.

5. Outline the chemistry and synthesis of Vitamin A.

6. Discuss the chemistry of Acetyl coenzyme A.

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MARCH 2007

[KQ 295] Sub. Code : 2813

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper IV — NATURAL PRODUCTS OF MEDICINAL INTEREST

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.

Your answer should be specific to the questions asked.

Give structure and molecular formulae wherever necessary.

I. Long Essay :

1. Explain the biogenetic pathway of Indol alkaloids. (20)

2. (a) Discuss the different methods to determine the N-terminal and C-terminal amino acids in polypeptides. (7)

(b) Discuss the structure elucidation of oxytocin. (8)

3. Discuss the biosynthesis and structure elucidation of reserpine. (15)

II. Short notes : (6 × 5 = 30)

1. Explain the general methods for the isolation of alkaloids.

2. Write the reactions involved in the conversion of morphine to morphol.

3. Discuss the structure elucidation of D-penicillamine and penilloaldehyde.

4. Write the chemistry of Vitamin A.

5. Explain the relation of structure to physiological activity of naturally occurring adrenal cortical hormones.

6. Discuss the chemistry and biological activity of digitalis glycosides.

MARCH 2007

[KQ 321] **Sub. Code : 2857**

M.Pharm. DEGREE EXAMINATION.

(Regulations 2006)

First Year

Branch II — Pharmaceutical Chemistry

Paper IV — NATURAL PRODUCTS OF MEDICINAL INTEREST

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.

Give chemical structure wherever necessary.

I. Long Essays :

1. (a) Briefly outline the extraction and constitution of quinine including its synthesis.

(b) Outline the conversion of diosgenin into important hormones of therapeutic interest. (10 + 10 = 20)

2. Discuss the chemistry and clinical significance of various antibiotic belonging to monobactams, carbapenems and penems. (15)

3. Briefly discuss the isolation, chemistry and stereochemistry of cardienolides and bufadienolides. (15)

II. Short notes : (6 × 5 = 30)

1. Give an account of isolation and chemistry of Rutin.

2. Briefly explain the application of ORD in structural studies of natural product.

3. Briefly discuss the chemistry and isolation of active constituent of Gymnema Sylvestre.

4. Discuss briefly the recombinant DNA technology in development of novel vaccines.

5. Briefly outline the chemistry of Asperlicin and Etoposide and focus them as future leads for new pharmaceuticals.

6. Discuss the principle and application of counter current distribution in separation of plant constituents.

SEPTEMBER 2007

[KR 295] **Sub. Code : 2813**

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper IV — NATURAL PRODUCTS OF MEDICINAL INTEREST

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) Discuss the general principle of isolation of alkaloids with special reference to opium alkaloids.

(b) Discuss the chemistry and elucidation of structure of Reserpine. (20)

2. Briefly explain the chemistry and stereo chemistry of cholesterol. Outline the chemistry and synthesis of prednisolone. (8 + 7 = 15)

3. Outline the isolation and chemistry of various cardenolides employed clinically. (15)

II. Write short notes : (6 × 5 = 30)

1. Counter current distribution.

2. Coenzymes.

3. Synthesis of thiamine.

4. Cephalosporins.

5. Chemistry of Insulin.

6. Biogenetic hypothesis of alkaloids.

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SEPTEMBER 2007

[KR 321] **Sub. Code : 2857**

M.Pharm. DEGREE EXAMINATION.

(Regulations 2006)

Branch II — Pharmaceutical Chemistry

Paper IV — NATURAL PRODUCTS OF MEDICINAL INTEREST

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 Essays :

1. (a) Define alkaloids, classify them and write about the general methods employed for determining the structure of alkaloid.

(b) What are steroids? What happens to a steroidal compound when it is subjected to selenium distillation at different temperatures? (13 + 7)

2. Write in detail about the chemistry, stereo chemistry and mechanism of action of cardiac glycosides. (15)

3. (a) Write in brief about the role of recombinant DNA technology in Drug discovery.

(b) Describe the mechanism of action of penicillins and cephalosporins. (10 + 5)

II. Short notes : (6 × 5 = 30)

1. Discuss about β-lactamase inhibitors.

2. Write about the chemical constituents of different natural products used in indegenous system for diabetic treatment.

3. Write about the principle involved and applications of HPLC in separation and analysis of Natural products.

4. What are steroidal hormones and write in brief about the natural hormones and currently used synthetic derivatives.

5. Write in brief about the structural determination of Xanthotoxin.

6. Write in brief about non β-lactum antibiotics.

September 2008

[KT 321] **Sub. Code : 2857**

M.Pharm. DEGREE EXAMINATION.

(Regulations 2006)

Branch II — Pharmaceutical Chemistry

Paper IV — NATURAL PRODUCTS OF MEDICINAL INTEREST

Q.P. Code : 262857

Time : Three hours Maximum : 100 marks

Answer ALL questions.

I. Long Essay : (3 × 20 = 60)

1. (a) Discuss in details the similarities and differences between penicillins and cephalosporins. Add a note on their mechanism of action.

(b) Outline the development of β-lactamase inhibitors. (10 + 10 = 20)

2. Write in detail the general mathodoligies employed in the structural elucidation of alkaloids. Discuss them with respect to the elucidation of reserpine structure. (20)

3. (a) Give the classification and discuss the stereochemistry and nomenclature of steroids.

(b) Explain the structural elucidation of reserpine. (10 + 10 = 20)

II. Short notes : (8 × 5 = 40)

1. Give the applications of IR in structural determination of natural products with suitable examples.

2. Explain the chemistry and SAR of Aminoglycoside antibiotics.

3. Give an account of any two natural antidiabetic drugs.

4. Write a note on DNA sequencing-a new biological target.

5. Discuss in detail the structural determination of Xanthotoxin.

6. Discuss the chemistry and SAR of cardiac glycosides.

7. Explain the chemistry of rutin.

8. Write a note on macrolide antibiotics.

March 2009

[KU 321] **Sub. Code: 2857**

M.PHARM. DEGREE EXAMINATION
(Regulations 2006)
Candidates admitted from 2006-2007 onwards
FIRST YEAR
Branch II – PHARMACEUTICAL CHEMISTRY
Paper IV – NATURAL PRODUCTS OF MEDICINAL INTEREST
Q.P. Code : 262857

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

Answer All questions

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

1. a) Discuss the Constitution of Morphine.
   b) Briefly outline the counter current distribution for the separation of plant constituents.
   c) How do you determine methoxy, Hydroxylamide, N-methyl and carboxyl groups present in alkaloids by chemical test.

2. a) Discuss the detailed applications of MASS Spectrometry for the structural determination of natural products.
   b) Discuss the nomenclature of steroid Nucleaus.
   c) Write notes on structure of diosgenin.

3. a) Give an account of the chemistry of rutin.
   b) Write short notes on cardiac glycosides.
   c) Discuss the structural determination of xanthotoxin.

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

1. Discuss the mechanism of actions of penicillins.
2. Write a note on polypeptide antibiotics.
3. Discuss the effect of curcuma longa as an Antitumour drug.
4. Add a note on Triterpenoids.
5. Discuss the importance of steroid receptor.
6. Briefly outline the application of HPLC for the separation of plant constituents.
7. What are the B-lactum agents?
8. Write a note on DNA cloning.

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September 2009

[KV 321] **Sub. Code: 2857**

M.PHARM. DEGREE EXAMINATION

(Regulations 2006)

Candidates admitted from 2006-2007 onwards

FIRST YEAR

Branch II – PHARMACEUTICAL CHEMISTRY

Paper IV – NATURAL PRODUCTS OF MEDICINAL INTEREST

Q.P. Code : 262857

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

Answer All questions

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

1. Briefly describe about recombinant DNA technology. Write a note on gene therapy.

2. Classify penicillins with examples. Explain the mechanism of action and SAR of penicillins. Write a note on degradation of penicillins.

3. a) Write in a detail about currently used synthetic hormones.
   b) Explain the importance of GLS and HPLC in separation

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

1. Explain the role of swertia chirata in diabetic therapy.
2. Write a note on aminoglycoside antibiotics.
3. Explain the stereo chemistry of steroids.
4. Application of HPLC in natural chemistry.
5. Discuss the therapeutic importance of flavonoids.
6. Explain the chemistry quercetin.
7. Discuss in detail the structural determination of psoralene.
8. Explain briefly about cepham and penam ring systems.

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March 2010

[KW 321] **Sub. Code: 2857**

M.PHARM. DEGREE EXAMINATION
(Regulations 2006)
Candidates admitted from 2006-2007 onwards
FIRST YEAR
Branch II – PHARMACEUTICAL CHEMISTRY
Paper IV – NATURAL PRODUCTS OF MEDICINAL INTEREST
Q.P. Code : 262857

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

Answer All questions

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

1. a) Explain the structural elucidation of morphine.
   b) Define alkaloid. Classify them with examples. Explain about isolation of alkaloids.

2. a) Explain the importance of GLC and HPLC in separation.
   b) Give the general structural elucidation of terpenoids.

3. a) Explain with appropriate example the role of recombinant DNA technology in drug discovery.
   b) Give the structure of atleast four aminoglycoside antibiotics and explain their SAR.

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

1. Give the application of NMR in structural determination of natural products.

2. Explain the stereochemistry of rutin.

3. Give the general structure of penicillins and cephalosporins and explain about their ring systems.

4. Explain the role of curramin in the treatment of cancer.

5. Explain the role of steroids in treating various diseases.

6. Write a note on degradation of pencillins.

7. Give an account of any two natural antidiabetic drugs.

8. Cephalosporins.

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September 2010

[KX 321] **Sub. Code: 2857**

M.PHARM. DEGREE EXAMINATION

(Regulations 2006)

Candidates admitted from 2006-2007 onwards

FIRST YEAR

Branch II – PHARMACEUTICAL CHEMISTRY

Paper IV – NATURAL PRODUCTS OF MEDICINAL INTEREST

Q.P. Code : 262857

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

Answer All questions

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

1. Define and classify alkaloids. Elucidate the structure of Reserpine.
2. a) Explain the importance of CCD and HPLC in separation of plant constituents.
   b) Give an account of recombinant DNA technology and gene therapy.
3. Explain the mechanism and degradation of penicillins. Give an account of cabapenams, monobactams and ß-lactamase inhibitors.

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

1. Explain the chemistry and SAR of macrolide antibiotics.
2. Explain the chemistry of flavonoids with examples.
3. Explain the chemistry and SAR of cephalosporins.
4. How do you establish the following in Cholesterol? I) Side chain ii) Hydroxy group.
5. Explain the chemistry and therapeutic applications of synthetic hormones.
6. Explain the stereochemistry of steroids.
7. Explain the chemistry of psoralene.
8. Explain the therapeutic applications of swertia chirata and phylanthus neruri.

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MAY 2011

[KY 321] **Sub. Code: 2857**

M.PHARM. DEGREE EXAMINATION

(Regulations 2006)

Candidates admitted from 2006-2007 onwards

FIRST YEAR

BRANCH II – PHARMACEUTICAL CHEMISTRY

PAPER IV – NATURAL PRODUCTS OF MEDICINAL INTEREST

Q.P. Code : 262857

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

Answer All questions

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

1. a) Explain the general isolation and purification employed for alkaloids.

   b) Briefly elucidate the structure of Reserpine.

2. Give an account on nocardicins and monobactams and their mechanism of action.

3. Briefly explain on the technique like MS, ORD and CD involved for the structural studies of natural products.

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

1. Explain the SAR of steroidal hormones.
2. Discuss briefly on the chemistry of macrolides.
3. Briefly explain the chemistry of asperlicin and milbemycins.
4. Give a brief account on the active constituents of phyllanthus niruri.
5. Write a note on cardiac glycosides and its types.
6. Describe in detail about antisense oligonucleotide therapy.
7. Brief out the mechanism of action and SAR of penicillins.
8. Explain the chemistry of coumarins with example.

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