[ND 280] **NOVEMBER 1994**

M.Pharm. DEGREE EXAMINATION.

(New Regulations)

First Year

Branch II — Pharmaceutical Chemistry

NATURAL PRODUCTS OF MEDICINAL INTEREST

Time : Three hours Maximum : 100 marks

Answer any FOUR questions.

All questions carry equal marks.

1. (a) Amino acids are considered to be biogenetic precursors of alkaloids. Illustrate your answer with suitable examples. (15)

(b) Give an account of qualitative reactions employed for the detection of plant constituents. (10)

2. (a) Discuss the structural elucidation of cholesterol including stereo chemistry. (15)

(b) Write a brief note on B complex group of vitamins. (10)

3. (a) Write some important degradative sequences and spectroscopic evidence to establish the structure of reserpine. (15)

(b) Discuss the structure activity relationship in corticosteroids. (10)

4. What are cardiac glycosides? Describe the method of isolation of these glycosides giving their sources. Discuss the structural elucidation of ouabain. (25)

5. Write notes on :

(a) J values in high resolution ^{1}H--NMR. (8)

(b) E.I.-MS in the structural elucidation of natural products. (8)

(c) End group analysis in peptides. (9)

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[SB 309]

APRIL 1995

M.Pharm. DEGREE EXAMINATION.

First Year

(New Regulations)

Branch II — Pharmaceutical Chemistry

NATURAL PRODUCTS OF MEDICINAL INTEREST

Time : Three hours. Maximum : 100 marks.

Answer any FOUR questions.

All questions carry equal marks.

1. (*a*) Discuss the general methods of degradation and structural determination in the study of alkaloids. (13)

(*b*) Give the degradative and spectroscopic evidence to establish the structure of vincristine. (12)

2. (*a*) "Biogenetically morphine belongs to the isoquinoline group of elkaloids". Substantiate. (15)

(*b*) Give an account of general methods of degradation of peptides. (10)

3. Classify antibiotics with examples. Discuss in detail the chemistry of penicillin and the development and clinical significance of semisynthetic penicillins. (25)

[SB 309]

4. (*a*) Discuss the chemistry and biological significance of two important nucleosides. (12)

(*b*) Discuss the chemistry and role of Folic acid. (13)

5. Write notes on :

(*a*) I.R. finger prints and their significance. (8)

(*b*) ORD/CD. (8)

(*c*) Corticosteroids. (9)

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[AK 310] **APRIL 1996**

M.Pharm. DEGREE EXAMINATION.

(New Regulations)

First Year

Branch II — Pharmaceutical Chemistry

NATURAL PRODUCTS OF MEDICINAL INTEREST

Time : Three hours Maximum : 100 marks

Answer any FOUR questions.

All questions carry equal marks.

1. (a) Discuss the structural elucidation and stereochemistry of cholesterol.

(b) Give the spectroscopic evidence to establish the structure of reserpine.

2. (a) Describe the method of isolation of opium alkaloids giving their sources. Discuss the structural elucidation of morphine.

(b) List the chemical tests used in the identification of morphine alkaloids.

3. Discuss

(a) Chemistry of β–lactum antibiotics.

(b) Chemistry of Nucleosides.

(c) General methods of degradation of polypeptides.

4. Classify vitamins with examples. Explain the method of isolation of Vit. C from the natural source. Give a large scale method of manufacturing Vit. C. Discuss in brief the uses and official method of its assay.

5. Write notes on :

(a) Application of mass spectra in structural elucidation of natural products.

(b) Chemistry of Ergot alkaloids.

(c) End group analysis in peptides.

OCTOBER 1996

[PK 206]

M.Pharm. DEGREE EXAMINATION.

(New Regulations)

Branch II — Pharmaceutical Chemistry

NATURAL PRODUCTS OF MEDICINAL CHEMISTRY

Time : Three hours Maximum : 100 marks

Answer any FOUR questions.

All questions carry equal marks.

1. The leaves of a medicinal plant are suspected to contain some alkaloids. Prepare a project report for plans to explore the possibility of using the drug constituents of the above plant in modern medicine.

2. Discuss the importance of the study of biogenesis. What are the techniques used for the above study? Write the biogenetic pathway for any one alkaloid.

3. (a) Explain how proteins are isolated and purified.

(b) Discuss the various end gap analytical techniques for polypeptides.

(c) Write a note on the preparation of insulin.

4. (a) Discuss the stereochemistry of steroids and the application of O.R.D. in the study of the above.

(b) Discuss the chemistry of cardiac glycosides.

(c) Describe the manufacture of ampicillin and explain its advantages over pencillin G.

5. (a) Describe the synthesis of Thiamine.

(b) Discuss the chemistry of two important nucleosides.

(c) Explain the degradative reactions of atropine.

APRIL 1997

M.Pharm DEGREE EXAMINATION

MP258 (New Regulations)

First Year

Branch II - Pharmaceuitcal Chemistry

Paper IV - NATURAL PRODUCTS OF MEDICINAL INTEREST

Time: Three hours Max.marks: 100

Answer Any FOUR questions

All questions carry equal marks

1. Write the conformational aspects of cardiac glycosides and explain the SAR comparing Digoxin, Scillarin A and Ouabain.

2. Write the biogenetic pathway leading to the formation of Indole alkaloids.

3. (a) Describe the methods of isolation of Vincristin and Vinblastin from Vinca.

   (b) Elucidate the structure of Papaverine.

4. (a) Explain the effect of irradiation of Ergosterol.

   (b) Write the chemistry of Thiamine.

5. Explain the application of MS, NMR and IR in structural elecidation of naturally occuring terpenoids with suitable examples.

MS 242 **OCTOBER 1997**

M.Pharm. DEGREE EXAMINATION

(New Regulations)

First Year

Branch II - Pharmaceutical Chemistry

Paper IV - NATURAL PRODUCTS OF MEDICINAL INTEREST

Time: Three hours Max. marks:100

Answer any FOUR questions

All questions carry equal marks

1. (a) Explain how opium alkaloids are isolated and purified.

   (b) Discuss the structural features and degradative reaction of the above alkaloids. (8+17)

2. Explain the methods employed for the isolation, purification and structure elucidation (primary, secondary and tertiary structures) of proteins.

3. (a) Write the biogenetic pathway of atropine.

   (b) How is cortisone synthesised? (12+13)

4. (a) Discuss the chemistry of various beta-lactam antibiotics.

   (b) Explain the S.A.R. of tetracyclines. (15+10)

5. Write notes on:

   (a) Cardiac glycosides

   (b) Chemistry of Thiamine. (12+13)

APRIL 1998

[SV 274]

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. Explain the application of MS, NMR, and IR in structural elucidation of naturally occurring Flavanoids with suitable examples.

2. (a) Write the conformational aspects of 5α–Cholestane.

(b) Describe the partial synthesis of Cortisone from 3α : 21 — diacetoxy pregnane — 11 : 20 dione.

3. Discuss the concept of Acetate hypothesis in relation to endocrocin.

4 Describe the method of isolation of Ergot alkaloids. Elucidate the chemistry and activity of Ergot alkaloids.

5. Write briefly on the following :

(a) Preparation of Insulin.

(b) Chemistry of Beta–lactam antibiotics.

(c) End group analysis in peptides.

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[KA 274] **OCTOBER 1999**

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. Explain in detail the applications of the following with regard to separation and analysis of the plant constituents :

(a) ^1H NMR

(b) M.S.

(c) O.R.D.

(d) GLC

(e) HPLC.

2. How are the following purified? Give their general methods of degradation in identifying their structures :

(a) Vasopressin

(b) Oxytocin.

Explain the methods adopted in carrying out end group analysis.

3. (a) Discuss in detail the structures of Vin cristine and Vin blastine.

(b) Write a note on Ergot alkaloids.

(c) Write a note on Morphine and its derivatives.

4. Classify the cardiac glycosides on the basis of their structures. Write the significance of glycon part of it and essential structures of the aglycon part for the cardiotonic activity. Mention the principle behind its biological evaluation.

5. Write notes on the following :

(a) Commercial preparation of Vitamins A, folic acid and pyridoxine.

(b) Coenzymes.

(c) Purification of proteins.

APRIL 2000

[KB 274]

M.Pharm. DEGREE EXAMINATION.

(New Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper IV — NATURAL PRODUCTS OF MEDICINAL CHEMISTRY

Time : Three hours Maximum : 100 marks

Answer any FOUR questions.

All questions carry equal marks.

1. Describe the general methods of separation of plant constituents and the qualitative reactions for identification of the same. Explain the principle involved in brief for the following separation techniques :

(a) Counter current distribution

(b) GLC

(c) HPLC.

2. (a) Write a note on Isoprene rule.

(b) What are ergot alkaloids? Discuss the structure of ergotamize and ergometrize.

3. (a) Describe the methods employed in endgroup analysis of a polypeptide molecule and indicate how the structure of a polypeptide can be determined.

(b) Discuss the SAR among digitalis group of cardiac glycosides and the importance of sugar residues.

4. Give a detailed account of the chemistry of β .lactum antibiotics and the semi synthetic derivatives prepared from the same.

5. Discuss the chemistry of ascorbic acid. How is its structure established? Discuss the role of folic acid and pyridoxine as growth factors.

6. Write notes on the following :

(a) Antifungal antibiotics

(b) Stereochemistry of Reserpine molecule

(c) SAR of cortico steroids

(d) Chemistry of hormone oxytocin and its pharmaceutical importance.

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[KC 274] **OCTOBER 2000**

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. (a) How will you isolate and detect cardiac glycosides in plants?

(b) What are the IR, NMR and MS spectral datas expected from Terpenoids. Explain with two suitable examples.

2. Discuss the Biogenetic pathways leading to the formation of Ergot alkaloids.

3. Explain the structural elucidation of cortisone.

4. (a) Write the chemistry of Vitamin A_1 and Vitamin A_2 and give the synthesis of Vitamin A_1 starting from Beta–ionone through Wittig reaction.

(b) How will you convert Vitamin A_1 to A_2?

5. Write short notes on the following :

(a) Chemistry of nucleotides.

(b) End group analysis in peptides.

(c) Chemistry of Beta–lactam antibiotics.

6. (a) Write the conformational aspects of 5–α – cholestane.

(b) Elucidate the structure of cholesterol.

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