APRIL 2001

[KD 273]

M.Pharmacy DEGREE EXAMINATION.

(New Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper III — ADVANCED MEDICINAL CHEMISTRY

Time : Three hours Maximum : 100 marks

Answer any FOUR questions.

All questions carry equal marks.

1. (a) What are Prodrugs? Discuss the attempts made on drug molecules to increase the aqueous solubility and gastro intestinal absorption of drugs and also to have an effective action on the CNS. Discuss with specific examples.

(b) Write a note on Antiparkinsonian drugs. (25)

2. (a) Explain the effects of protein binding on the pharmacokinetic aspects of drug action.

(b) Write a note on Molecular connectivity and drug design. (25)

3. Elaborate the various parameters taken into consideration for the various methods used in QSAR. Discuss their advantages and disadvantages. (25)

4. (a) Write about the importance of bio isosterism and steric features in drug design.

(b) How do biochemical and physiological information show a path to the development of new drugs. (25)

5. Write notes on any THREE of the following :

(a) Hansch Analysis

(b) Synthetic Antihypertensive agents

(c) Prostaglandins

(d) Nitrogen mustards as alkylating agents for antineoplastic drugs. (25)

6. (a) Give an account of non narcotic analgesics.

(b) Write a note on non steroidal antifertility agents. (25)

[KD 294] **APRIL 2001**

M.Pharmacy DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper III — ADVANCED MEDICINAL CHEMISTRY

Time : Three hours Maximum : 100 marks

Answer ALL the questions.

All questions carry equal marks.

1. (a) With the help of suitable examples discuss the effect of Hydrogen Bonding and Red–ox potential on Biological Activity.

(b) Describe the different conjugation reactions in drug metabolism. (25)

2. (a) What are the factors affecting drug metabolism? Describe each factor with examples.

(b) Explain the role of Oxidative reactions, Reductive reactions and Hydrolytic reactions in drug metabolism with examples. (25)

3. What are the objectives of QSAR study? What are its limitations? Describe the various theoretical constants useful in the parameterization of electronic factors in QSAR? (25)

4. (a) Give the detailed procedure involved in the manufacture of

(i) Phenacetin and

(ii) Sulfadimidine.

(b) Write a note on Peptides and Peptide hormones. (25)

[KE 273] NOVEMBER 2001

M.Pharm. DEGREE EXAMINATION.

(New Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper III — ADVANCED MEDICINAL CHEMISTRY

Time : Three hours Maximum : 100 marks

Answer any FOUR questions.

All questions carry equal marks.

1. (a) Derive parabolic equation for relationship between biologic activity and partition co-efficient. Give limitations and pitfalls of QSAR. (13)

(b) Explain briefly the manufacture of the following :

(i) Sulphadimidine (ii) Paracetamol. (12)

2. Explain the biologic action with relation to the following :

(a) Hydrogen bonding (b) Chelation (c) Surface activity (d) Redox potential. (25)

3. What do you mean by metabolism of drugs. Discuss the factors affecting drug metabolism. Describe role of drug metabolism in drug designing. (25)

4. (a) Write notes on the following (Any Two) :

(i) Prodrug (ii) Antiviral agents (iii) antihyperlipidemic agents. (13)

(b) Outline the synthetic route of any three from the following :

(i) Indomethacin (ii) 6-mercaptopurine (iii) Propranolol (iv) Diazepam. (12)

5. Explain the term antineoplastic agents. Give suitable classification of it with examples. Discuss in details antimetabolite and nitrogen mustard used in cancer therapy. (25)

6. What is hypertension? Give classification of anti hypertensive agents according to their mode of action. Give synthesis of clonidine and ephedrine. Give brief account of prostaglandins. (25)

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NOVEMBER 2001

[KE 294]

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper III — ADVANCED MEDICINAL CHEMISTRY

Time : Three hours Maximum : 100 marks

All questions carry equal marks.

1. (a) Discuss the various sites for biotransformations and the role of cytochrome P.450 in various reactions including conjugation pathway. (25)

(b) What are the factors that affect drug metabolism? Discuss the enzymatic as well as chemical aspects related to these.

2. (a) How do the physico chemical aspects correlate with biologic activity? (25)

(i) Isosterism

(ii) Hydrogen bonding

(iii) Chelation

(iv) Oxidation–reduction potential.

(b) Write a note on the manufacture of Diethyl carbamazine citrate.

3. (a) How do the following factors help in understanding the concept of drug design? (25)

(i) Steric substituent constants

(ii) Van–der Waal's dimension

(iii) Molecular connectivity

(iv) Rm value.

(b) Write a note on Antineoplastic drugs.

4. (a) What are prodrugs? What facts are taken into consideration in the design of these type of drugs? Explain with suitable examples. (25)

(b) Write a note on prostaglandins and their chemistry.

SEPTEMBER 2002

[KH 273]

M.Pharm. DEGREE EXAMINATION.

(New Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper III — ADVANCED MEDICINAL CHEMISTRY

Time : Three hours Maximum : 100 marks

Answer any FOUR questions.

All questions carry equal marks.

1. (a) Enumerate the various physicochemical factors that modulate the biological activity of drugs and discuss in detail any two of them.

(b) Give an account of the receptor theory of drug action. (16 + 9)

2. Illustrate with suitable examples the role of cytochrome P450 mono oxygenase in the metabolism of drugs. (25)

3. (a) What are prodrugs? Discuss the therapeutic objectives in prodrug design giving examples.

(b) Give an account of the utility of Hammet constants in SAR studies. (15 + 10)

4. (a) Outline the various strategies adopted in the design of antineoplastic drugs giving examples.

(b) Enumerate the various classes of non–narcotic analgesics giving examples. Outline the synthesis and mode of action of any two drugs belonging to different chemical classes. (12 + 13)

5. (a) Mention the various neurodegenerative disorders and discuss the chemistry and mode of action of drugs for the treatment of any one such disorder.

(b) Write a note on the source, chemistry and biological activity of oxytocin. (15 + 10)

6. Give an account of the following :

(a) Manufacture of chloroquine phosphate

(b) Chemistry and biological activity of statins

(c) Therapeutic potential of prostaglandins. (8 + 8 + 9)

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SEPTEMBER 2002

[KH 294]

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper III — ADVANCED MEDICINAL CHEMISTRY

Time : Three hours Maximum : 100 marks

Answer ALL questions.

All questions carry equal marks.

1. (a) Describe the events that modulate the drug action when the drugs are administered through the oral route.

(b) Discuss giving suitable examples how stereochemistry affects the biological activity of drugs. (15 + 10)

2. Discuss giving suitable examples the importance of the following in drug metabolism :

(a) Reductive reactions

(b) Hydrolytic reactions

(c) Conjugation reactions. (8 + 8 + 9)

3. (a) Enumerate and discuss the molecular targets utilised for the design of antiviral drugs giving specific examples.

(b) Write a note on the therapeutic potential of dopaminergic antagonists. (15 + 10)

4. Describe the factors implicated in the aetiology of essential hypertension. Outline a suitable classification of antihypertensive drugs based on their mechanism of action and give the synthesis of enalapril, propranolol and methyl DOPA. (8 + 8 + 9)

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[KI 294] **APRIL 2003** **Sub. Code : 1006**

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper III — ADVANCED MEDICINAL CHEMISTRY

Time : Three hours Maximum : 100 marks

Answer ALL questions.

All questions carry equal marks.

1. (a) What are prodrugs? How are they designed? Explain with suitable examples how drugs are designed for increased duration of action and shorter duration of action, eliminating the unwanted physical properties of a drug.

(b) Write a note on antifertility agents. (15 + 10)

2. (a) Give examples of various antiviral agents. Discuss the strategy in development of drugs acting on retroviruses.

(b) Outline the manufacture of sulphadimidine. (15 + 10)

3. (a) Explain in detail the different parameters adopted in QSAR studies.

(b) Write a note on Hansch analysis and the limitations of QSAR methods. (15 + 10)

4. (a) Explain the complex events that follow the administration of drugs orally.

(b) Discuss the concept of drug receptor interaction explaining the forces involved in the same.

(c) Explain how the pharmacokinetic studies can help in the design of drugs. (8 + 7 + 10)

[KJ 294] OCTOBER 2003 Sub. Code : 1006

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper III — ADVANCED MEDICINAL CHEMISTRY

Time : Three hours Maximum : 100 marks

Answer ALL questions.

All questions carry equal marks. (4 × 25 = 100)

1. (a) Enumerate and discuss the various factors that influence the absorption and distribution profile of drugs. (12)

(b) Describe the various hydrolytic reactions and conjugation pathways for the metabolism of drugs. (13)

2. (a) Discuss the objectives and strategies of PRO DRUG design giving examples. (13)

(b) Give a generalised form of the Hausch equation and comment on the significance of its various terms. (12)

3. (a) Describe the biosynthetic pathway for the formation of prostaglandins and leukotrienes. Explain their physiological and pathological effects. (13)

(b) Give the synthesis and clinical uses of one drug from each of the following categories : (12)

(i) Dihydro folate reductase inhibitors.

(ii) Reverse transcriptase inhibitors.

(iii) HMG co-A reductase inhibitors.

4. (a) Give an account of alkylating agents covering their classification, mode of action and synthesis of two members. (9)

(b) Describe the pharmacological effects and clinical uses of the peptide hormones isolated from the pituitary gland. (8)

(c) Write a note on the manufacture of either diethyl carbamazine citrate or sulphadimidine. (8)

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[KK 294] APRIL 2004 Sub. Code : 1006

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper III — ADVANCED MEDICINAL CHEMISTRY

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. How does the following affect the lead modification?
   (a) Isosterism
   (b) Homologation and
   (c) Partition coefficient.

2. Explain the various theories of drug receptor interactions. Why is occupancy theory most widely accepted? Explain.

SECTION B

Short notes : (10 × 5 = 50)

3. Explain the role of cytochrome P450 in oxidative Biotransformation with suitable examples.

4. How does pro–drug influences pharmacokinetic profile of drugs?

5. What are Eicosonoids? How are they useful in the design of New drugs?

6. Classify and list out the rationale in the design of Anti–hyper lipidemic agents.

7. List out the various strategies used in the design of innovative Anti–hypertensive agents.

8. Classify and explain the mechanism of action of NSAIDS.

9. Outline the method for the synthesis of
   (a) Chloroquin
   (b) Diethyl carbamazine citrate.

10. Azathymidine, a well known Anti–AIDS is also an Anti–viral agent. Explain.

11. Give the mechanism of action of any three classes of Anti–cancer agent.

12. Write briefly on peptide hormones. Mention their applications.

[KL 294] AUGUST 2004 Sub. Code : 1006

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper III — ADVANCED MEDICINAL CHEMISTRY

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. Explain various events of Metabolism with suitable examples. How does metabolism helps in the design of drugs? (8 + 7)

2. List out various strategies employed in the design of prodrugs. Explain protein binding of drugs. (7 + 8)

SECTION B

Short notes : (10 × 5 = 50)

3. Classify Antihypertensive agents with suitable examples.

4. Explain molecular connectivity and give applications.

5. List out various factors affecting Drug metabolism.

6. How do you apply Bio Isosterism and Taft substituent constant in QSAR studies?

7. Write briefly on Peptide hormones.

8. Give the mechanism of action of Antimetabolites in cancer chemotherapy.

9. What are Narcotic Antagonists? Classify Narcotic analgesics.

10. Classify Anti parkinsonic agents and mention their applications.

11. Outline the method for the synthesis of Diethyl Carbamazine citrate and chloroquin.

12. Write the important class of antifertility agents.

FEBRUARY 2005

[KM 294] Sub. Code : 1006

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper III — ADVANCED MEDICINAL CHEMISTRY

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. Discuss how different physicochemical properties help to study the absorption and distribution profile of different classes of drugs.

2. Describe the various theoretical constants used for the parameterization of electronic factors in QSAR.

SECTION B — (10 × 5 = 50 marks)

3. Write a note on the significance of hydrogen bonding in relation to its biological activity.

4. Explain the significance of cytochrome P-450 in oxidative biotransformations.

5. What are the different factors that affect the drug metabolism? — Explain with few examples.

6. Explain the pharmacokinetic objectives in the design of prodrugs.

7. Explain the significance of Hausch analysis in QSAR studies.

8. What is pro-drug concept? Illustrate this with any one category of drug.

9. Explain the salient structural features involved in different classes of antineoplastic agents.

10. Write a note on SAR of morphine analogus.

11. Discuss briefly the structure and biological significance of prostaglandins.

12. Write an account of free-Wilson approach in QSAR studies.

[KN 294] AUGUST 2005 Sub. Code : 1006

M.Pharm. DEGREE EXAMINATION

(Revised Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper III — ADVANCED MEDICINAL CHEMISTRY

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 following physicochemical properties in relation to biological action

(a) Solubility and partition co-efficients

(b) Hydrogen bonding. (8 + 7)

2 List out the various parameters that are used in quantitative structure activity relationship (QSAR) and explain their importance. Write a note on limitations of QSAR. (12 + 3)

II. Short notes : (10 × 5 = 50)

1. Write the classification of antineoplastic agents with examples.

2. Explain the role of cytochrome P-450 monoxygenases in the oxidation of xenobiotics.

3. Explain the chemistry and medicinal uses of various morphine derivatives.

4. Outline the synthesis of paracetamol and chloroquine.

5. Write the different combinations of estrogen and progestin used as oral contraceptives.

6. Write briefly about various stratagies employed in the design of prodrugs.

7. Write the chemistry and biological significance of insulin.

8. What is parkinsonism? Write the classification of anti-parkinsonism drugs with examples.

9. Explain drug metabolism with emphasis on "Stereochemical aspects".

10. Outline the synthesis of an antihypertensive agent and an antihyperlipidemic agent.

[KO 294] MARCH 2006 Sub. Code : 1006

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper III — ADVANCED MEDICINAL CHEMISTRY

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 in detail, the manufacture of

(a) Sulfadimidine

(b) Chloroquine phosphate. (2 × 7.5 = 15)

2. Define prodrug? Discuss the applications of prodrug approach to drug design with respect to the following by giving one specific example for each

(a) Prevention of first–pass metabolism

(b) Reduction of side–effects

(c) Prolongation of duration of action

(d) Improvement of drug formulation

(e) Ocular drug delivery. (5 × 3 = 15)

II. Short notes : (10 × 5 = 50)

1. Define bio–isosteres and explain how this concept is used in drug design with the help of any five examples.

2. Write a note on drug–receptor interactions with examples.

3. Explain with suitable examples, the effect of solubility and ionization on the biological activity of drugs.

4. Explain the role of cytochrome P–450 and MAO in oxidative biotransformation of drugs with the help of suitable examples.

5. With the help of one example, explain Hansch Analysis. What are its limitations?

6. Define, classify and explain the mode of action of anti–viral agents. (Give chemical structures of atleast 5 anti–viral agents)

7. Classify antihypertensive agents. Give their SAR and describe the synthesis of any one anti–hypertensive agent.

8. Write a note on narcotic and non–narcotic analgesic agents.

9. With the help of suitable examples, explain how stereo chemical aspects of drug metabolism can be exploited in drug design.

10. Enumerate the different parameters used in QSAR. Write a note on steric and electronic parameter. How are they related to the drug potency?

SEPTEMBER 2006

[KP 294] **Sub. Code : 2812**

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper III — ADVANCED MEDICINAL CHEMISTRY

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) Briefly explain the chemistry of various steroids used as oral contraceptives.

(b) Explain any five factors that affect the drug metabolism. (10 + 10 = 20)

2. List out the various parameters that are used in Quantitative Structure Activity Relationship (QSAR) and explain their importance in Hansch analysis. Write a note on limitations of QSAR. (12 + 3)

3. Explain the following physicochemical properties in relation to biological action.

(a) Steric features of drugs

(b) Surface activity. (8 + 7)

II. Short notes : (6 x 5 = 30)

1. Write the synthesis of any two antineoplastic agents.

2. Explain the SAR of morphine derivatives.

3. Outline the synthesis of paracetamol and chloroquine.

4. Write briefly about the biological significance and chemistry of prostaglandins.

5. What is parkinsonism? Write the classification of antiparkinsonism drugs with examples.

6. Explain the significance of cytochrome P–450 monoxygenases in the oxidation of xenobiotics.

[KQ 294] MARCH 2007 **Sub. Code : 2812**

M.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

First Year

Branch II — Pharmaceutical Chemistry

Paper III — ADVANCED MEDICINAL CHEMISTRY

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. Classify Antihypertensive agents. Give the synthesis of one drug from each class. Also give the mechanism of action for Angiotensin-converting enzyme inhibitor. (20)

2. Explain how the various steps of Hansch Analysis are employed in designing of a candidate drug molecule. (15)

3. Describe in detail the manufacture of (a) sulfadimidine (b) chloroquine phosphate. (15)

II. Short notes : (6 × 5 = 30)

1. Explain the concept of bio-isosterism.

2. Explain the factors affecting drug metabolism.

3. Write notes on steric-constants used in drug design.

4. What is the role of cytochrome P-450 monooxygenase in oxidative biotransformation?

5. Give the mechanism of any one antimetabolite used in treating neoplasms.

6. How is the manufacture of paracetamol carried out?

MARCH 2007

[KQ 320] Sub. Code : 2856

M.Pharm. DEGREE EXAMINATION.

(Regulation 2006)

First Year

Branch II — Pharmaceutical Chemistry

Paper III — ADVANCED MEDICINAL CHEMISTRY

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) Explain the different parameters that affect QSAR studies, giving suitable examples. Discuss the application of Hansch analysis.

(b) Give an account of biosterism in drug design. (15 + 5)

2. (a) What are pro-drugs? Explain the various aspects governing pro-drug design.

(b) Write briefly on irreversible gastric proton pump inhibitors. (10 + 5)

3. (a) Classify immunosuppressants and immunostimulants in detail.

(b) Explain the design of noncovalently binding enzyme inhibitors. (7 + 8)

II. Short notes : (6 × 5 = 30)

1. Give an account of chemistry of oral contraceptives.

2. Outline the synthesis of sulphamethoxazole and paracetamol.

3. Give detailed account of alkylating agents and antimetabolites as antineoplastic agents.

4. Explain the chemistry and biological significance of prostaglandins.

5. Explain the ring and peripheral modifications of morphine.

6. Discuss the various steps used in microbial conversion. Enlist the advantages over chemical synthesis.

SEPTEMBER 2007

[KR 320] **Sub. Code : 2856**

M.Pharm. DEGREE EXAMINATION.

(Regulation 2006)

First Year

Branch II — Pharmaceutical Chemistry

Paper III — ADVANCED MEDICINAL CHEMISTRY

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) Write in detail about the Gastric proton pump inhibitors.

(b) What are immune responses and write in detail about the agents affecting immune response.

(10 + 10 = 20)

2. Describe the parameters that effect QSAR studies with suitable examples. Discuss the application of Hansch analysis. (15)

3. Explain in detail about the molecular modelling involved in drug design. (15)

II. Short notes : (6 × 5 = 30)

1. Classify antihypertensive agents with suitable examples and Write about the mechanism of action of 'ACE' inhibitors.

2. Give brief account on antiviral agents.

3. Write about the synthesis of indomethacin and pheniramine maleate.

4. Write in brief about the enantio selectivity in drug absorption, distribution, metabolism and elimination (ADME).

5. Write about the biosynthetic pathway for prostaglandins and leukotrienes from membrane phospholipids.

6. Write in brief about the theoretical aspects of microbial transformations in the production of some drugs.

September 2008

[KT 320] **Sub. Code : 2856**

M.Pharm. DEGREE EXAMINATION.

(Regulation 2006)

First Year

Branch II — Pharmaceutical Chemistry

Paper III — ADVANCED MEDICINAL CHEMISTRY

Q.P. Code : 262856

Time : Three hours Maximum : 100 marks

Answer ALL questions.

I. Long Essay : (3 × 20 = 60)

1. (a) What is meant by gastric proton pump inhibitor? Discuss the development of a gastric proton pump inhibitor.

(b) Write a note on Drug – receptor interactions.

(15 + 5 = 20)

2. (a) Describe the molecular modeling in drug design.

(b) Give an account of free Wilson analysis in QSAR studies. (10 + 10 = 20)

3. Discuss the pro-drug design and its importance in optimizing pharmacokinetics Parameters of drugs. (20)

II. Short Notes : (8 × 5 = 40)

1. Discuss the various steps used in microbial conversion. Explain how it is used as a better tool than chemical synthesis in the drug industry.

2. Explain the design of noncovalently binding enzyme inhibitors.

3. Write a note on the agents under development for HIV infection.

4. Discuss the design of analogues by bio Isosteric replacement.

5. Discuss Hammet's equation and its role in predicting biological activity.

6. Explain the method of manufacturing of sulphamethoxazole.

7. Give a short account on antihypertensive agents.

8. Discuss the role of chirality in selective and specific therapeutic agents.

March 2009

[KU 320] **Sub. Code: 2856**

M.PHARM. DEGREE EXAMINATION

(Regulations 2006)

Candidates admitted from 2006-2007 onwards

FIRST YEAR

Branch II – PHARMACEUTICAL CHEMISTRY

Paper III – ADVANCED MEDICINAL CHEMISTRY

Q.P. Code : 262856

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

Answer All questions

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

1. a) Discuss various electronic parameters of QSAR studies.
   b) Write a note on quantum mechanics in molecular modeling.
   c) Add a note on Antineoplastic agents

2. a) Discuss the design and practical aspects of pro drugs.
   b) What are the Enzyme inhibitors in basic research?
   c) Give the methods of manufacture of Diphenhydramine.

3. a) Discuss the theoretical and practical aspects of Microbial transformation in production of certain drugs.
   b) Write a note on gastric acid inhibitors.
   c) What are prostaglandins, give their importance.

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

1. Discuss the role of chirality in therapeutic agents.
2. How do you manufacture sulphamethaxa zole.
3. Write short notes molecular mechanics.
4. Add a note on 3D QSAR approach
5. Write a note on immune response.
6. Discuss the inartio selectivity in drug distribution.
7. What are the forces involved in drug Receptor interactions?
8. Enumerate various approaches of drug design from lead molecule.

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September 2009

[KV 320] **Sub. Code: 2856**

M.PHARM. DEGREE EXAMINATION

(Regulations 2006)

Candidates admitted from 2006-2007 onwards

FIRST YEAR

Branch II – PHARMACEUTICAL CHEMISTRY

Paper III – ADVANCED MEDICINAL CHEMISTRY

Q.P. Code : 262856

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

Answer All questions

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

1. a) Explain the merits and de-merits of Hansch analysis and Fee Wilson analysis.
   b) Explain in detail about enzyme inhibitors.

2. Classify anti neoplastic agents with examples. Give the mode of action and synthesis of any four anticancer drugs belonging to different class.

3. a) Explain about molecular modelling in drug design.
   b) Write a note on drug-receptor interaction.

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

1. Define isosterism and bio-isosterism with examples and explain their role.

2. How do you synthesise paracetamol?

3. Explain the mode of action of calcium channel blockers.

4. Explain in detail about viral replications.

5. Write a note on concept of pro-drug.

6. Explain the biological role of prostaglandins.

7. Distinguish between proton pump inhibitors and H2 receptor blockers.

8. Explain the mode of action and synthesis and iodoxuridine.

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March 2010

[KW 320] **Sub. Code: 2856**

M.PHARM. DEGREE EXAMINATION

(Regulations 2006)

Candidates admitted from 2006-2007 onwards

FIRST YEAR

Branch II – PHARMACEUTICAL CHEMISTRY

Paper III – ADVANCED MEDICINAL CHEMISTRY

Q.P. Code : 262856

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

Answer All questions

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

1. a) Explain with suitable examples how partition coefficient and hydrogen bonding affect the biological activity of a drug.
   b) List out the meritis and demeritis of QSAR.

2. a) Explain about Hansch analysis in QSAR studies.
   b) Describe in detail about receptor, types and subtypes.

3. a) What is a pharmacophore. Discuss in detail about pharmacophore models.
   b) What is isosterism. Define bio isosterism with suitable examples explain how bioisosterism effects the biological activity of drugs.

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

1. Distinguish between synthetic assay and biological assay.
2. Explain the mechanism of action of alkylating agents.
3. Discuss briefly about immuno stimulants.
4. List out the structures of irreversible gastron proton pump inhibitors.
5. Explain the synthesis and mode of action of clonidine.
6. Write short notes on chirality in therapeutic agents.
7. Explain the synthesis of sulfa methoxazole.
8. Write short notes molecular mechanics.

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September 2010

[KX 320] **Sub. Code: 2856**

M.PHARM. DEGREE EXAMINATION

(Regulations 2006)

Candidates admitted from 2006-2007 onwards

FIRST YEAR

Branch II – PHARMACEUTICAL CHEMISTRY

Paper III – ADVANCED MEDICINAL CHEMISTRY

Q.P. Code : 262856

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

Answer All questions

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

1. a) Give a detailed account on pro drug design.
   b) Explain the rational design of covalently binding enzyme inhibitors.

2. a) Explain in detail about drug receptor interactions.
   b) Write a note on 3D QSAR.

3. a) Explain the mode of action and synthesis of Anti-Viral agents.
   b) Discuss the importance of Bio-isosteric replacement in drug design.

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

1. Explain the method of manufacture of Indomethacin.
2. Give a brief account on Immuno suppressants.
3. Write the mode of action and synthesis of ACE inhibitors.
4. Discuss the development of Irreversible Gastric proton pump inhibitors.
5. Write in detail about the biosynthetic pathway of prostaglandins and leukotriens.
6. Explain the role of Chirality in selective specific therapeutic agents.
7. Write a note on Quantum Mechanics in drug design.
8. Explain the theoretical aspects of microbial transformation in preparation of some drugs.

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MAY 2011

[KY 320] **Sub. Code: 2856**

M.PHARM. DEGREE EXAMINATION

(Regulations 2006)

Candidates admitted from 2006-2007 onwards

FIRST YEAR

BRANCH II – PHARMACEUTICAL CHEMISTRY

PAPER III – ADVANCED MEDICINAL CHEMISTRY

Q.P. Code : 262856

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

Answer All questions

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

1. Discuss the following approach in drug design from Lead molecule
   a. Bio isosteric replacement.
   b. Change in ring size and ring position.
   c. Alteration of chain branching.
2. a. Explain Hansch analysis.
   b. Discuss the drug receptor interaction.
3. a. Discuss the mode of action and synthesis of any two antihypertensive drugs.
   b. Describe the chemistry of prostaglandin.

II. Write short notes on: **(8 x 5 = 40)**

1. Discuss any two aspects in pro drug design.
2. Explain the Rational design of non – covalent binding enzyme inhibitors.
3. Write the irreversible gastric proton pump inhibitors.
4. Discuss the immuno suppressant.
5. Write the method of manufacture of sulpha methoxazole.
6. Discuss the role of chirality in selection and specific therapeutic agents.
7. Explain the theoretical aspects of microbial transformations in the production of certain drugs.
8. Write about pharmcophore models.

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