**MAY 2011**

**[KY 345]** **Sub. Code: 2906**

**M.PHARM. DEGREE EXAMINATION**

**(Regulations 2010)**

**Candidates admitted from 2010-2011 onwards**

**FIRST YEAR**

**BRANCH II – PHARMACEUTICAL CHEMISTRY**

**PAPER III – ADVANCED MEDICINAL CHEMISTRY**

***Q.P. Code : 262906***

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

**Answer All questions**

**I. Essay Questions:** **(6 x 10 = 60)**

1. Explain the role of G-Protein Coupled Receptor in the Cell Signaling Pathway.
2. What is meant by Analog Design? Explain in detail Bioisoteric Replacements and Rigid Analogs.
3. Discuss the various physico-chemical parameters that affect biological activity.
4. Explain how enzyme inhibitors are used against microorganisms and the body's own enzymes to produce effective therapeutic agents. Give examples.
5. Outline the synthesis of Omeprazole and Clonidine.
6. Discuss the importance of enantio selectivity in drug absorption , metabolism, distribution and elimination.

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

1. Outline the steps involved in the manufacture of Pheniramine Maleate.
2. Explain the mechanism of action of intercalating agents.
3. Explain Craig Plot.
4. Give five applications of Pro-drug design with suitable examples.
5. Inhibitors of viral reverse transcriptase.
6. Monte Carlo method of conformational Analysis.
7. Interferons.
8. Explain how proton pump inhibitors act.

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**October 2011**

**[KZ 345]** **Sub. Code: 2906**

**M.PHARM. DEGREE EXAMINATION**

**FIRST YEAR**

**BRANCH II – PHARMACEUTICAL CHEMISTRY**

**PAPER III – ADVANCED MEDICINAL CHEMISTRY**

***Q.P. Code : 262906***

**Time : 3 hours (180 Min)** **Maximum : 100 marks**

**Answer ALL questions in the same order.**

| **I. Elaborate on :** | **Pages (Max.)** | **Time (Max.)** | **Marks (Max.)** |
|---|---|---|---|
| 1. a) Discuss the various stearic substituent constants commonly used in QSAR. Explain the effect of stearic and electromeric parameters on lipophilicity. | 17 | 40 | 20 |
| b) Classify antiviral agents. Explain the mechanism of action and synthesis of one drug form 2 different classes. | | | |
| 2. Define Prodrug. Elaborate various types of prodrug design with suitable example. | 17 | 40 | 20 |
| **II. Write notes on :** | | | |
| 1. Pyrimidine antimetabolites. | 4 | 10 | 6 |
| 2. Manufacturing process of Diphenhydramine. | 4 | 10 | 6 |
| 3. Enantio-selectivity in drug absorption. | 4 | 10 | 6 |
| 4. Immuno response. | 4 | 10 | 6 |
| 5. Design of enzyme inhibitors as drugs. | 4 | 10 | 6 |
| 6. Molecular mechanics in molecular modeling. | 4 | 10 | 6 |
| 7. Gastric acid secretion and its inhibitors. | 4 | 10 | 6 |
| 8. Antihypertensive agents. | 4 | 10 | 6 |
| 9. How does rigid analog and alteration of chain branching help in Analog design. | 4 | 10 | 6 |
| 10. What are Prostaglandins? How are they useful in the design of new drugs? | 4 | 10 | 6 |

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**[LA 345]** **MAY 2012** **Sub. Code: 2906**

**M.PHARM. DEGREE EXAMINATION**

**FIRST YEAR**

**BRANCH II – PHARMACEUTICAL CHEMISTRY**

**PAPER III – ADVANCED MEDICINAL CHEMISTRY**

***Q.P. Code: 262906***

**Time: 3 hours** **Maximum: 100 marks**

**(180 Min)**

**Answer ALL questions in the same order.**

| **I. Elaborate on:** | **Pages (Max.)** | **Time (Max.)** | **Marks (Max.)** |
|---|---|---|---|
| 1. a) Explain the analog design and detail on bioisosteric replacement with examples. b) Discuss the rational of prodrug design and practical consideration. | 17 | 40 | 20 |
| 2. a) Explain the importance of enantio selectivity in drug absorption, metabolism, distribution and elimination. b) Write briefly about gastric proton pump inhibitors. | 17 | 40 | 20 |

**II. Write notes on:**

| | | | |
|---|---|---|---|
| 1. Explain the chemistry and biological significance of prostaglandins. | 4 | 10 | 6 |
| 2. Explain 3D QSAR approaches. | 4 | 10 | 6 |
| 3. Give detailed account of alkylating agents as anti-neoplastic drugs. | 4 | 10 | 6 |
| 4. Write briefly on Quantum mechanism. | 4 | 10 | 6 |
| 5. Write a note on immuno stimulants. | 4 | 10 | 6 |
| 6. Outline the Steps involved in the manufacture of Diphenhydramine. | 4 | 10 | 6 |
| 7. Write a note on covalently binding enzyme inhibitors. | 4 | 10 | 6 |
| 8. Discuss about drug receptor interactions. | 4 | 10 | 6 |
| 9. Explain pharmacophore models. | 4 | 10 | 6 |
| 10. Give the application of Craig plot. | 4 | 10 | 6 |

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**[LB 345]** **NOVEMBER 2012** **Sub. Code: 2906**

**M.PHARM. DEGREE EXAMS**

**FIRST YEAR**

**BRANCH II – PHARMACEUTICAL CHEMISTRY**

**PAPER III – ADVANCED MEDICINAL CHEMISTRY**

***Q.P. Code : 262906***

**Time : 3 hours** **Maximum : 100 marks**

**(180 Min)**

**Answer ALL questions in the same order.**

| **I. Elaborate on :** | **Pages (Max.)** | **Time (Max.)** | **Marks (Max.)** |
|---|---|---|---|
| 1. a) Describe the medicinal aspects and SAR of alkylating agents. b) Describe the types of drug receptor interactions. | 17 | 40 | 20 |
| 2. a) Describe various concepts involved in quantum mechanics. b) Explain various stereochemical aspects involved in drug action. | 17 | 40 | 20 |

**II. Write Notes on :**

| | | | |
|---|---|---|---|
| 1. Describe various physicochemical parameters involved in QSAR studies. | 4 | 10 | 6 |
| 2. Explain the medicinal chemistry aspects of reverse transcriptase inhibitors as antiviral agents. | 4 | 10 | 6 |
| 3. Write a note on the manufacture of pheniramine maleate. | 4 | 10 | 6 |
| 4. Explain the design of covalently binding enzyme inhibitors. | 4 | 10 | 6 |
| 5. Explain the mechanism involved in gastric acid secretion. | 4 | 10 | 6 |
| 6. Explain the pharmacokinetic and biopharmaceutical aspects of prodrug design. | 4 | 10 | 6 |
| 7. Explain the rigid analog design strategy in analog design. | 4 | 10 | 6 |
| 8. Write a note on the medicinal applications of prostaglandins. | 4 | 10 | 6 |
| 9. Write a note on immune modulators. | 4 | 10 | 6 |
| 10. Briefly explain the medicinal aspects of Angiotensin converting enzyme inhibitors. | 4 | 10 | 6 |

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**[LC 345]** **APRIL 2013** **Sub. Code: 2906**

**M.PHARM. DEGREE EXAMS**

**FIRST YEAR**

**BRANCH II – PHARMACEUTICAL CHEMISTRY**

**PAPER III – ADVANCED MEDICINAL CHEMISTRY**

***Q.P. Code : 262906***

**Time : 3 hours** **Maximum : 100 marks**

**I. Elaborate on :** **(2x20=40)**

1. a) Write in detail accounts QSAR models.
   b) Classify the covalently binding enzyme inhibitors with example.
2. a) Define analog design . Explain in detail rigid analog and fragments of leads molecule.
   b) Discuss the various test assays for studying gastric acid inhibition.

**II. Write notes on :** **(10x6=60)**

1. Outline the steps involved in the manufacture of the sulphamethoxazole.
2. Classify Antihypertensive drugs and explain the mechanism of ACE inhibitors.
3. Write a note on immune response.
4. Write briefly on known receptors sites on molecular modeling.
5. Discuss the role of chirality in the receptors and specific therapeutic agents.
6. Writes briefly about drugs receptors interactions.
7. Give the application of Hansch analysis.
8. Explain pharmacophore models.
9. Writes a note on regression analysis and partial least square analysis.
10. Explain the biological significance of leukotrienes.

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**[LD 345]** **OCTOBER 2013** **Sub. Code: 2906**

**M.PHARM. DEGREE EXAMINATIONS**

**FIRST YEAR**

**BRANCH II – PHARMACEUTICAL CHEMISTRY**

**PAPER III – ADVANCED MEDICINAL CHEMISTRY**

***Q.P. Code : 262906***

**Time: Three Hours** **Maximum: 100 marks**

**Answer ALL questions in the same order.**

**I. Elaborate on :** **(2 x 20 = 40)**

1. a) Describe in details about receptor types and sub types.

   b) Classify antihypertensive drugs with examples. Give the mechanism of action and synthesis of one drug form two different classes.

2. a) Define prodrug. Explain with examples the different aspects of prodrugs in drug designing.

   b) Discuss in detail about different approaches in drug design from lead molecule.

**II. Write notes on :** **(10 x 6 = 60)**

1. Hansch analysis in QSAR studies.
2. Molecular mechanics.
3. 3D QSAR approaches in drug design.
4. How partition coefficient affect the biological activity of a drug with example
5. Enzyme inhibitors in basic research.
6. Role of chirality in selective and specific therapeutic agents.
7. Method of manufacture of paracetamol.
8. Irreversible gastric proton pump inhibitors.
9. Immuno stimulants.
10. Synthesis and mode of action of anti viral agent.

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**[LE 345]** **APRIL 2014** **Sub. Code: 2906**

**M.PHARM. DEGREE EXAMS**
**FIRST YEAR**
**BRANCH II – PHARMACEUTICAL CHEMISTRY**
**PAPER III – ADVANCED MEDICINAL CHEMISTRY**

***Q.P. Code : 262906***

**Time : 3 hours** **Maximum : 100 marks**

**I. Elaborate on :** **(2x20=40)**

1. a) Discuss in detail about drug receptor interaction
   b) Classify antineoplastic agents with examples. Give the mode of action and synthesis of one drug form two different classes.

2. a) Explain the rational design of covalently binding enzyme inhibitors.
   b) Explain the importance of prodrug design with suitable examples.

**II. Write notes on :** **(10x6=60)**

1. Merits and demerits of Hansch analysis and Free Wilson analysis.
2. Pharmacophore models in drug design.
3. Mechanism of action and synthesis of ACE inhibitors.
4. Enantio selectivity in the distribution of drugs.
5. Industrial method of manufacture of indomethacin.
6. How bio-isosterism effects the biological activity of drugs.
7. Immuno suppressants.
8. Various approaches of drug design from lead molecule
9. Gastric proton pump inhibitors.
10. Regression analysis and partial least square analysis.

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**[LF 345]** **OCTOBER 2014** **Sub. Code: 2906**

**M.PHARM. DEGREE EXAMINATION**
**FIRST YEAR**
**BRANCH II – PHARMACEUTICAL CHEMISTRY**
**PAPER III – ADVANCED MEDICINAL CHEMISTRY**

***Q.P. Code : 262906***

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

**I. Elaborate on:** **(2 x 20 = 40)**

1. a) Explain the biosynthesis of Prostaglandins.
   b) Give the mechanism of action of prostaglandins.
   c) Write a note on clinically approved prostaglandins.

2. Explain (with case study) the role of chirality in drug absorption, metabolism, distribution and elimination.

**II. Write notes on:** **(10 x 6 = 60)**

1. Explain the SAR, mechanism of action and synthesis of irreversible proton pump inhibitors.
2. What do you mean by 3D QSAR? Write a short note on CoMFA.
3. What is IC50? Give the general mechanism of reversible and irreversible enzyme inhibitors.
4. Explain the method of manufacture of sulphamethoxazole.
5. Explain briefly the various forces involved in the non-covalently binding enzyme inhibitors.
6. Explain the disorders associated with elevated gastric acid secretions.
7. Give the structure and synthesis of following:
   a) Nifedipine b) Prazosin c) Hydralazine
8. What is immune response? Discuss briefly about immuno-stimulants.
9. How does prodrug help to overcome the pharmacokinetic problems associated with the drug discovery process?
10. Antiviral agents

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