THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LL 943] NOVEMBER 2017 **Sub. Code: 2943**

M.PHARM. DEGREE EXAMINATION
(PCI New regulations 2016)
SEMESTER-I
PHARMACEUTICAL CHEMISTRY – MPC
PAPER III – ADVANCED MEDICINAL CHEMISTRY

Q.P. Code : 262943

Time : Three hours **Maximum : 75 Marks**

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

1. Discuss elaborately about the aspects involved in the rational design of Enzyme Inhibitors.

2. a) Explain the design and medicinal aspects of Peptidomimetics.
   b) Explain various strategies utilized to combat drug resistance in Antibiotic therapy.

II. Write notes on: **(7 x 5 = 35)**

1. Brief out the types of bioisosters and bioisosteric replacement approach.

2. Write a note on COX1 inhibitors.

3. Write a detailed note on the role of stereo selectivity in therapeutic agents.

4. Discuss about the different approaches in lead discovery prior to drug discovery.

5. Explain various forces involved in drug receptor complex formation.

6. Write a note on cholinergic agents.

7. Brief out on the types and practical applications of prodrugs.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LM 943] MAY 2018 **Sub. Code: 2943**

M.PHARM. DEGREE EXAMINATION
(PCI New regulations 2016)
SEMESTER-I
PHARMACEUTICAL CHEMISTRY – MPC
PAPER III – ADVANCED MEDICINAL CHEMISTRY

Q.P. Code : 262943

Time : Three hours **Maximum : 75 Marks**

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

1. Explain elaborately the types of receptors, forces involved and the theories of drug receptor interactions.

2. Discuss in detail about various stereo chemical aspects involved in drug action.

II. Write notes on: **(7 x 5 = 35)**

1. Write a note on the utilization of changes in ring size and alteration of chain branching approach in analog design.

2. Outline various aspects of H1 and H2 receptor antagonists.

3. Briefly explain about the aspect of enzyme kinetics.

4. Explain the techniques used in peptidomimetic design.

5. Outline the biosynthesis of eicosanoids.

6. Discuss briefly about the mechanism of action, structure and synthesis of any one viral DNA polymerase inhibitors.

7. Brief out on the identification, validation and diversity of biological target in drug discovery.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LN 943] NOVEMBER 2018 **Sub. Code: 2943**

M.PHARM. DEGREE EXAMINATION
(PCI New regulations 2016)
SEMESTER-I
PHARMACEUTICAL CHEMISTRY – MPC
PAPER III – ADVANCED MEDICINAL CHEMISTRY

Q.P. Code : 262943

Time : Three hours **Maximum : 75 Marks**

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

1. Elaborate in detail various strategic approaches utilized in analog design of drugs.

2. Enumerate the medicinal chemistry aspects describing the classification, mechanism of action, structure, SAR and synthesis of any two alkylating agents.

II. Write notes on: **(7 x 5 = 35)**

1. Brief out the chemistry of prostaglandins with emphasis to the drugs used in therapy.

2. Write a note on the causes underlying in the development of resistance in drugs.

3. Discuss briefly about the design and types of non-covalently binding enzyme inhibitors.

4. Write a brief account on the basis of example about the importance of enantioselectivity in drug absorption.

5. Briefly discuss about the types of receptors.

6. Brief out about the importance of prodrug design in therapy.

7. Write a note on the medicinal chemistry aspects of anticonvulsant agents.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LO 943] MAY 2019 **Sub. Code: 2943**

M.PHARM. DEGREE EXAMINATION
(PCI New regulations 2016)
SEMESTER-I
BRANCH II – PHARMACEUTICAL CHEMISTRY – MPC
PAPER III – ADVANCED MEDICINAL CHEMISTRY

Q.P. Code : 262943

Time : Three hours **Maximum : 75 Marks**

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

1. a) Discuss the stages of drug discovery.
   b) Discuss the different types of receptors.

2. a) Explain the principles of analog design.
   b) Discuss the chemistry of COX_2 inhibitors.

II. Write notes on: **(7 x 5 = 35)**

1. Artificial enzymes.
2. Role of prodrug to improve drug solubility.
3. Role of enantioselectivity in drug distribution.
4. Modification of peptide back bone.
5. Genetic principles of drug resistance.
6. Enzyme inhibitors in medicine.
7. SAR of anticonvulsant drugs.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LP 943] NOVEMBER 2019 **Sub. Code: 2943**

M.PHARM. DEGREE EXAMINATION
(PCI New regulations 2016)
SEMESTER-I
BRANCH II – PHARMACEUTICAL CHEMISTRY – MPC
PAPER III – ADVANCED MEDICINAL CHEMISTRY

Q.P. Code : 262943

Time : Three hours **Maximum : 75 Marks**

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

1. Discuss elaborately about the stages of drug discovery, lead discovery, identification, validation and diversity of drug targets.

2. Discuss in details about the rational of prodrug design and practical considerations of prodrug design.

II. Write notes on: **(7 x 5 = 35)**

1. Explain various strategies utilized to combat drug resistance in Antibiotic therapy.
2. Write a note on COX2 inhibitors.
3. Write a note on the medicinal chemistry aspects on Anticonvulsant drugs.
4. Write note on covalently binding enzyme inhibitors.
5. Briefly explain the chemistry of Prostaglandins.
6. Write the classical and non classical bio isosteric replacement strategies.
7. Write note on theories of drug receptor interaction.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LQ 0121] JANUARY 2021 Sub. Code: 2943

(APRIL 2020 EXAM SESSION)

M.PHARMACY DEGREE EXAMINATION

SEMESTER-I (PCI New regulations 2016)

PHARMACEUTICAL CHEMISTRY – MPC

PAPER III – ADVANCED MEDICINAL CHEMISTRY

Q.P. Code : 262943

Time : Three hours **Answer ALL Questions** **Maximum : 75 Marks**

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

1. Discuss the rationale of pro drug design and practical considerations of pro drug design.

2. a) Explain the principle of enzyme inhibitors. Give suitable examples.
   b) Discuss the chemistry of prostaglandins and leukotriens.

II. Write notes on: **(7 x 5 = 35)**

1. Drug receptor interactions.
2. SAR of H_1 & H_2 receptor antagonist.
3. Role of enantioselectivity in drug absorption.
4. Design of peptidomimetics by manipulation of aminoacids.
5. Causes of drug resistance.
6. Types of receptors.
7. Bioisosteric replacement strategies with examples.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[MPHARM 0422] APRIL 2022 Sub. Code: 2943
(OCTOBER 2021 EXAM SESSION)

M.PHARMACY DEGREE EXAMINATION
SEMESTER-I (PCI New regulations 2016)
PHARMACEUTICAL CHEMISTRY - MPC
PAPER III – ADVANCED MEDICINAL CHEMISTRY
Q.P. Code : 262943

Time : Three hours **Answer ALL Questions** **Maximum : 75 Marks**

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

1. Discuss about various stereo chemical aspects in drug action.

2. a) Classify antiviral agents with suitable examples and its chemical structure.
   b) Give the mechanism of action and synthesis of any two antiviral agents.
   c) Explain the SAR of antiviral agents.

II. Write notes on: **(7 x 5 = 35)**

1. Discuss about the bioisosteric replacement methods.
2. Give a brief note on genetic principles of drug resistance.
3. Discuss about enzyme kinetics.
4. Explain with example about prodrug to improve site specific drug delivery and sustained drug action.
5. Write a note on cholinergic agents.
6. Give an outline about various stages of drug design.
7. Write about modification of peptide back bone.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[M.PHARM 0922] **SEPTEMBER 2022** **Sub. Code: 2943**
(APRIL 2022 EXAM SESSION)

M.PHARMACY DEGREE EXAMINATION
SEMESTER - I (PCI New regulations 2016)
PHARMACEUTICAL CHEMISTRY - MPC
PAPER III - ADVANCED MEDICINAL CHEMISTRY

Q.P. Code : 262943

Time : Three hours **Answer ALL Questions** **Maximum : 75 Marks**

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

1. Discuss the rational design of covalently binding Enzyme Inhibitors.

2. Elaborate on Lead identification and Optimization in Drug discovery process.

II. Write notes on: **(7 x 5 = 35)**

1. Explain the theories of Drug receptor interactions.
2. Give an account of design of prodrugs to improve patient acceptability.
3. Write medicinal chemistry aspects of antiviral agents.
4. Describe the design of peptidomimetics by manipulation of amino acids.
5. Write the biosynthesis pathway of Prostaglandins.
6. Write a note on genetic principles of drug resistance.
7. Briefly explain the concepts of homologation of alkyl chain in design of analogues.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[M.PHARM 0423] APRIL 2023 Sub. Code: 2943
(OCTOBER 2022 EXAM SESSION)

M.PHARMACY DEGREE EXAMINATION
SEMESTER - I (PCI New regulations 2016)
PHARMACEUTICAL CHEMISTRY - MPC
PAPER III - ADVANCED MEDICINAL CHEMISTRY

Q.P. Code: 262943

Time : Three hours **Answer ALL Questions** **Maximum : 75 Marks**

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

1. (a) Write the basic concept of Drug latentiation and discuss briefly about Carrier Linked Prodrugs.
   (b) Discuss the pharmacokinetic applications of Prodrug design.

2. (a) Explain the different types of receptors.
   (b) Describe the signaling mechanism involved in G-protein coupled receptors.

II. Write notes on: **(7 x 5 = 35)**

1. Explain about stages of Lead discovery.
2. Explain the role of chirality in specific therapeutic uses.
3. Discuss about chemistry of Leukotriene's.
4. Give an account of applications of Enzyme inhibitors in medicine and basic research.
5. Write SAR, mechanism of action and synthesis of anyone H_1 antagonist.
6. Illustrate the pharmacological changes during alteration of interatomic distance.
7. Describe the strategies to Combat Antibiotic Drug resistance.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[M.PHARM 0823] **AUGUST 2023** **Sub. Code: 2943**
(APRIL 2023 EXAM SESSION)

M.PHARMACY DEGREE EXAMINATION
SEMESTER - I (PCI New Regulations 2016)
PHARMACEUTICAL CHEMISTRY - MPC
PAPER III - ADVANCED MEDICINAL CHEMISTRY

Q.P. Code: 262943

Time : Three hours **Answer ALL Questions** **Maximum : 75 Marks**

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

1. (a) Write about basic concept of Analog design.
   (b) Explain the bioisosteric replacement strategies of Analog design.

2. (a) Explain the causes of Drug resistance.
   (b) Explain the strategies to combat drug resistance in anticancer therapy.
   (c) Give an account of biosynthesis of Thromboxones.

II. Write notes on: **(7 x 5 = 35)**

1. Brief note on enzyme kinetics in design of enzyme inhibitors.
2. Explain the importance and Applications of pro drug design.
3. Describe about ion-channel receptors.
4. Give an account of therapeutic values of peptidomimetics.
5. Explain the forces involved in drug receptor interactions.
6. Write SAR, mechanism of action and synthesis of ACE inhibitors.
7. Write notes on validation and diversity of drug targets.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[M.PHARM 1223] DECEMBER 2023 Sub. Code: 2943
(OCTOBER 2023 EXAM SESSION)

M.PHARMACY DEGREE EXAMINATION
SEMESTER - I (PCI New Regulations 2016)
PHARMACEUTICAL CHEMISTRY - MPC
PAPER III - ADVANCED MEDICINAL CHEMISTRY

Q.P. Code: 262943

Time: Three hours **Answer ALL Questions** **Maximum: 75 Marks**

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

1. a) Define peptidomimetics. Explain various strategies involved in the design of peptidomimetics.
   b) Enumerate briefly the effect of enantio selectivity in drug absorption, metabolism, distribution and elimination.

2. a) Explain briefly the medicinal chemistry aspects of antihypertensive agents.
   b) Explain briefly the aspects involved in prodrug design with special emphasis to the types, functions and applications.

II. Write notes on: **(7 x 5 = 35)**

1. Write a note on slow, tight, slow-tight inhibitors.
2. Add a note on the biosynthesis of arachidonic acid.
3. Write the mechanism of action, SAR, structure and synthesis of tricyclic antidepressants.
4. Add a note on the types of bioisosters and the approach of bioisosteric replacement.
5. Brief out about the medicinal chemistry aspects of H2 receptor antagonist.
6. Write a note on various strategies to combat drug resistance in antibiotic therapy.
7. Add a note on antineoplastic plant products.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[M.PHARM 0524] MAY 2024 Sub. Code: 2943
(APRIL 2024 EXAM SESSION)

M.PHARMACY DEGREE EXAMINATION
SEMESTER - I (PCI New Regulations 2016)
PHARMACEUTICAL CHEMISTRY - MPC
PAPER III - ADVANCED MEDICINAL CHEMISTRY

Q.P. Code: 262943

Time: Three hours **Answer ALL Questions** **Maximum: 75 Marks**

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

1. Enumerate the medicinal chemistry aspects describing the classification, mechanism of action, structure, SAR and synthesis of any two antineoplastic agents.

2. Discuss elaborately about the aspects involved in the Rational design of enzyme inhibitors.

II. Write notes on: **(7 x 5 = 35)**

1. Write the theories of drug receptor interaction.
2. Write note on COX1 inhibitors.
3. Briefly explain the enzyme kinetics.
4. Discuss about the chemistry of Prostaglandins.
5. Write note on stereo selectivity in therapeutic agents.
6. Short note on rational use of prodrug design.
7. Explain the design and medicinal aspects of peptidomimetics.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[M.PHARM 0425] **APRIL 2025** **Sub. Code: 2943**

M.PHARMACY DEGREE EXAMINATION
SEMESTER - I (PCI New Regulations 2016)
PHARMACEUTICAL CHEMISTRY - MPC
PAPER III - ADVANCED MEDICINAL CHEMISTRY

Q.P. Code: 262943

Time: Three hours **Answer ALL Questions** **Maximum: 75 Marks**

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

1. List out antineoplastic chemotherapeutic agents and anti-viral agents. Emphasize on anti-metabolites and DNA Polymerase inhibitors with chemistry, synthesis and mechanism of action.

2. Sum up on the rationale of prodrug design discussing each category with examples and chemical structures wherever necessary.

II. Write notes on: **(7 x 5 = 35)**

1. How are the various isomers targeted and utilized in Analog design?
2. Report on the stages of drug discovery leading to a LEAD identification.
3. Define the term enzyme kinetics and give a note on enzyme inhibitors used in medicine and research.
4. Jot down on the concept of enantio-selectivity in Pharmacokinetics.
5. Give a precise note on H1 inhibitors and their salient applications.
6. Outline the importance of chlorpromazine moiety along with its synthesis.
7. Distinguish between agonists and antagonists.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[M.PHARM 1025] **OCTOBER 2025** **Sub. Code: 2943**

M.PHARMACY DEGREE EXAMINATION
SEMESTER - I (PCI New Regulations 2016)
PHARMACEUTICAL CHEMISTRY - MPC
PAPER III - ADVANCED MEDICINAL CHEMISTRY

Q.P. Code: 262943

Time: Three hours **Answer ALL Questions** **Maximum: 75 Marks**

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

1. a) Jot down the various strategies adopted for bio-isosteric replacement with valid examples.
   b) Mention any two important classes of drugs generally prescribed for B.P. Explain their SAR and mechanism of action.

2. List out the biological targets. Discuss on the types, binding and activation drug receptor interaction.

II. Write notes on: **(7 x 5 = 35)**

1. Sum up on cholinergic agents with SAR and chemistry.
2. Outline the salient causes for drug resistance and the ways to combat the same.
3. Distinguish between COX I and COX II inhibitors with chemical structures.
4. Emphasize on the role of chirality in drug molecules.
5. Illustrate on the manipulation of amino acids for designing peptidomimetics.
6. Write about the modification of the peptide backbone with examples.
7. Provide a comprehensive note on the rational binding of enzyme inhibitors.

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