August 2011

[KZ 4262] **Sub. Code : 4262**

THIRD B.PHARM. EXAMINATION

Paper II – MEDICINAL CHEMISTRY - I

Q.P. Code : 564262

Time : Three hours **Maximum: 100 Marks**

Answer ALL questions.

I. LONG ESSAYS **(2 x 20 = 40)**

1. a) What are adrenergic neurotransmitters explain their function with example. **(2+8)**

   b) Derive the biosynthesis and metabolism of catecholamines. **(5+5)**

2. Explain the following physiochemical parameters related to biological activity with Example. **(4 x 5 = 20)**

   a) BioIsosterism **b)** Hydrogen bonding **c)** Geometrical Isomerism **d)** Chelation.

II. SHORT NOTES **(8 x 5 = 40)**

1. Application of Prodrug Design.
2. Classify General Anaesthetics with example. Give any one synthesis.
3. Give the Structural Activity Relationship of Tiazide Diuretics.
4. Add a note on COX-1 and COX-2 Inhibitors with mechanism.
5. Classify sedative and Hypnotics with example.
6. Define and classify Antitussive Agents with example.
7. Define Antipsychotics. Give the synthesis for chloropromazine hydrochloride.
8. Give the synthesis for the following: **a)** Chlorthiazide. **b)** Terbutaline.

III. SHORT ANSWERS **(10 x 2 = 20)**

Give the Structure and Medicinal uses for the following:

1. Halothane.
2. Diazepam.
3. Nikethamide.
4. Atenalol.
5. Benzocaine.

Define the following Terms:

6. Redox pontential.
7. Xenobiotics.
8. MAO Inhibitors.
9. Tranquilliser.
10. Local Anaesthetics.

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February 2012

[LA 4262] **Sub. Code: 4262**

THIRD B.PHARM. EXAMINATION

Paper II – MEDICINAL CHEMISTRY - I

Q.P. Code: 564262

Time : Three hours **Maximum: 100 Marks**

Answer ALL questions.

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

1. (a) Define Diuretics? Classify with example.**(2+6)**
   (b) Give the Structural Activity Relationship for the mercurial diuretics.**(7)**
   (c) Derive the synthesis for (i) Acetazolamide (ii) Furosemide.**(5)**

2. (a). Define and Classify local anaesthetics with example. **(2+3)**
   (b). Synthesis the followings: (i) Procaine (ii) Lignocaine (iii) Benzocaine (iv) Dibucaine. **(10)**
   (c) Give the Structural Activity Relationship of local anaesthetics.**(5)**

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

1. Write a note on BioIsosterism.
2. Add brief note on Phase II Bio transformation pathway.
3. Give the Synthesis for (a) Phentoin (b) Ibuprofen.
4. Write a note on cholinergic receptors.
5. Biosynthesis of Eicosanoids.
6. Define Sedative and hypnotics? Classify with example.
7. Add a note on Proton Pump Inhibitors.
8. Give the synthesis for the following: (i) Salbutamol (ii) Promethazine.

III. Short Answers: **(10 x 2 = 20)**

Give the Structure and Medicinal uses for the following

1. Aspirin.
2. Indomethicin.
3. Chlorpromazine HCl.
4. Diazepam.
5. Impiramine. HCl.

Define the following Terms

6. Chelation.
7. Carbonic Anhydrase Inhibitors.
8. Prodrug.
9. Tranquilliser.
10. Antiepileptics.

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[LB 4262] **AUGUST 2012** **Sub. Code: 4262**

THIRD YEAR B.PHARM. EXAM

Paper II – MEDICINAL CHEMISTRY - I

Q.P. Code: **564262**

Time : Three hours **Maximum: 100 Marks**

(180 Min) Answer ALL questions in the same order.

I. Elaborate on:	**Pages (Max.)**	**Time (Max.)**	**Marks (Max.)**
1. a) What are antihistamines? Classify them with examples. Explain the structure activity relationship of antihistamines. b) Write the synthetic pathway for i) Diphenhydramine HCl ii) Tripelenamine HCl iii) Promethazine HCl.	19	33	20
2. Explain in detail about Phase-II metabolic reactions with suitable examples.	19	33	20

II. Write notes on:			
1. Describe the Drug-Receptor Interactions.	3	8	5
2. Write the structure activity relationship of Benzodiazepine.	3	8	5
3. Write the synthesis for a) Carbamazepine b) Valproic acid.	3	8	5
4. Write a note on Cholinesterase Inhibitors.	3	8	5
5. What is the Mechanism of action of NSAIDs? Give the synthesis for any one NSAIDs.	3	8	5
6. What are Diuretics? Classify them with examples.	3	8	5
7. Write a note on General Anaesthetics.	3	8	5
8. Elucidate the prostaglandin synthesis from Arachidonic acid.	3	8	5

III. Short Answers:			
1. Structure and uses of Nikethamide.	1	5	2
2. Synthesis of Atenolol.	1	5	2
3. Briefly on Opiod Antagonists.	1	5	2
4. Define Local Anaesthetics with Mechanism of action.	1	5	2
5. Write the structures for a) Ketamine b) Thiopental sodium.	1	5	2
6. Define prodrug with example.	1	5	2
7. Surface activity on Biological action.	1	5	2
8. Synthesis of Salbutamol.	1	5	2
9. Define Neurotransmitter and give examples.	1	5	2
10. Structure and uses of Mecamylamine HCl.	1	5	2

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[LC 4262] **FEBRUARY 2013** **Sub. Code: 4262**

THIRD YEAR B.PHARM. EXAM

Paper II – MEDICINAL CHEMISTRY - I

Q.P. Code: **564262**

Time : Three hours **Maximum: 100 Marks**

(180 Min)

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

1. a) Classify NSAIDs with examples. Write the synthesis for Ibuprofen and Indomethacin **(6+6)**

   b) Explain the structure activity relationship of Morphine **(8)**
2. How the following physiochemical properties influences the drug's biological action

   a) Ionization b) Protein Binding c) Stereoisomerism d) Steric effect **(4X5=20)**

II. SHORT NOTES **(8X5=40)**

1. Write a note on Loop Diuretics.
2. Enumerate the factors affecting drug metabolism with examples
3. Write the synthetic route for Procaine and Dibucaine
4. Explain the applications of prodrugs.
5. Write the structures for a) Pheniramine maleate b) Meclizine c) Promethazine d) Ranitidine e) Omeprazole
6. Write the synthesis for Dicyclomine and Tropicamide
7. Explain the structure activity relationship of Barbiturates
8. What are Anticonvulsants? Classify them with examples

III. SHORT ANSWERS **(10X2=20)**

1. Dissociative anaesthesia
2. Mechanism of action of Diazepine
3. Define receptor and give examples
4. Structure and uses of Neostigmine and Bethanechol
5. Two prostaglandins approved for human clinical use.
6. Synthesis of Imipramine HCl
7. Irreversible anticholinesterase agents
8. Mechanism of action of Local Anaesthetics.
9. β-2 stimulants
10. Write the structure for Triflupromazine and Haloperidol

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(LD 4262) **AUGUST 2013** **Sub. Code: 4262**

THIRD YEAR B.PHARM. EXAM

PAPER II – MEDICINAL CHEMISTRY -I

Q.P. Code: 564262

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

I. Elaborate on: **(2X20=40)**

1. a) Explain the various types of Phase – I Biotransformation Pathways.

   b) Discuss factors affecting metabolism.

2. a) Classify H1 Receptor Antagonists? Give the synthesis for the following drugs.

   i) Diphenhydramine hydrochloride ii) Triprolidine hydrochloride

   iii) Cyclizine hydrochloride iv) Promethazine hydrochloride.

   b) Brief the SAR of H1 – receptor antagonist.

II. Write notes on: **(8X5=40)**

1. Explain the chemistry and biological significance of prostaglandins.
2. Outline the synthetic steps involved in a) Lignocaine b) Procaine.
3. Classify Anti-inflammatory agents and write the synthesis of Ibuprofen.
4. Brief the SAR of barbiturates.
5. Describe the synthesis and clinical use of the following:
   (a) Dextroamphetamine (b) Nikethamide.
6. Name the cholinergic blocking agents and explain the synthesis of any one of them.
7. How does hydrogen bonding affect biological activity? Explain with example.
8. Explain the methods of development of prodrugs.

III. Short Answers on: **(10X2=20)**

1. Chelation with examples.
2. Define antitussive and Write the structure of any two drugs?
3. Mechanism of action of Acetazolamide.
4. Structure, Chemical name and Uses of Phenobarbitone.
5. Neuromuscular blocking drugs.
6. Synthesis of Propranolol.
7. Write the structure of any two CNS stimulants.
8. Describe the synthesis and clinical use of thiamylal sodium.
9. Dicuss the SAR of phenothiazines.
10. Proton pump inhibitors

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(LE 4262) **FEBRUARY 2014** **Sub. Code: 4262**

THIRD YEAR B.PHARM. EXAM

PAPER II – MEDICAL CHEMISTRY -I

Q.P. Code: 564262

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

I. Elaborate on: **(2X20=40)**

1. a) Classify local anaesthetics with examples. Write the synthesis for procaine and dibucaine.

   b) Explain the structure activity relationship of barbiturates.

2. a) What is prodrug. Explain the various applications of prodrug design with suitable Examples.

   b) Explain the following physicochemical properties relation to biological activity of drugs.

      I. Chelation
      II. Hydrogen bonding

II. Write notes on: **(8X5=40)**

1. Write a brief note on phase II biotransformation pathway.
2. Outline the synthesis and mechanism of action of acetazolamide.
3. Describe the synthesis and clinical uses of diphenhydramine hydrochloride, promethazine hydrochloride.
4. Classify general anaesthetics with examples and write the synthesis of ketamine.
5. Explain the adnergic blocking agents and give the synthesis of propranolol.
6. Explain isosterism and steric effect.
7. Write the synthetic route for anyone narcotic analgesic compound.
8. Write the structure and mechanism of action of carbamazipine and primidone.

III. Short Answers on: **(10X2=20)**

1. Prostaglandins
2. Define anti-tussive agent with examples.
3. Enumerate the biosynthesis of nor adrenaline.
4. Write the structure and use of salbutamol and ephedrine.
5. Loop diuretics.
6. H_2 receptor antagonist.
7. Give the structure and use of gallamine triethiodide.
8. Write the structure for carbachol, tropicamide.
9. CNS stimulants.
10. Mechanism of action of methohexitol.

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(LF 4262) **AUGUST 2014** **Sub. Code: 4262**

THIRD YEAR B.PHARM. EXAM
PAPER II – MEDICINAL CHEMISTRY -I

Q.P. Code: 564262

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

I. Essay: **(2X20=40)**

1. a) Discuss the basic concept and application of Prodrug design.
   b) Write a brief note on phase –II biotransformation pathway.

2. a) What are sedative and Hypnotics? Classify with examples.
   b) Explain the synthesis for the following:
   i) Barbital ii) Diazepam iii) Chloropromazine hydrochloride
   iv) Valproic acid.
   c) Discuss the structure activity relationship of Barbiturates.

I. Short notes: **(8X5=40)**

1. Write the structure and clinical uses of a) Indomethacin b) Ibuprofen c) Haloperidol d) Cyclizine hydrochloride.
2. Outline the synthetic steps involved in a) Meperidine b) Methadone
3. Classify Diuretics and write the synthesis and SAR of Chlorthiazide.
4. Discuss about types of receptors.
5. Describe the synthesis and clinical use of the following:
   a) Imipramine hydrochloride b) Dextroamphetamine sulphate.
6. Name the cholinergic agents and explain the synthesis of any one of them.
7. How does chelation affect biological activity? Explain with example.
8. Classify adrenergic blocking agents. Outline the synthesis of metoprolol.

III. Short Answers: **(10X2=20)**

1. Hydrogen bonding with examples.
2. Define general anaesthetics and write the structure of any two drugs.
3. Mechanism of action of procaine.
4. Structure, Chemical Name and uses of Diphenhydramine.
5. Prostaglandins.
6. Give synthesis and uses of Phenyl ephrine.
7. Write the structure of any two cholinergic blocking agents.
8. Protein Binding.
9. Discuss the SAR of Tricyclic antidepressants.
10. H_2 receptor antagonists.

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(LG 4262) **FEBRUARY 2015** **Sub. Code: 4262**

THIRD YEAR B.PHARM. EXAMINATION
PAPER II – MEDICINAL CHEMISTRY -I

Q.P. Code: 564262

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

I. Essay: **(2 x 20 = 40)**

1. a) Define and classify CNS stimulants with suitable examples.
   b) Explain the mechanism, structure activity relationship and synthesis of
      i) Imipramine ii) Amitriptyline
   c) Write the synthesis of metoprolol and chlorcyclicine
2. a) Define and classify analgesics and anti-inflammatory agents. Write the synthesis and Mechanism of action of Ibuprofen.
   b) Outline the structure, physiochemical properties and biosynthesis of adrenergic Neurotransmitters.

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

1. Classify antipsychotics and write a note on SAR of chlorpromazine.
2. Describe about surface activity in relation to biological action.
3. Outline the stereochemistry of cholinergics with examples
4. Write the synthesis of i) Furosemide i) Naloxone
5. Explain about optical isomerism influencing biological action.
6. Distinguish between the structure and structure activity relationship of omeprazole and lansoprazole.
7. Explain the mechanism of action and use of i) Ketamine ii) Dextroamphetamine iii) Amiloride iv) Loratidine v) Acetaminophen
8. Define and classify anxiolytics. Write the synthesis of barbital.

III. Short answers: **(10X2=20)**

1. Define the following terms with examples: i) Transquillizer ii) Parasympatholytics
2. Write the structure and use of i) Cimetidine ii) Isoproterenol
3. Explain the structure activity relationship of Noscapine
4. Types of receptor
5. Significance of drug metabolism
6. Structure and uses of Salbutamol
7. Adrenergic receptor hypothesis
8. Write the structure and mode of action of i) Piperocaine ii) Tetracaine
9. Redox potential
10. Write the structure of i) Salsalate ii) Oxymorphine

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[LH 4262] **AUGUST 2015** **Sub. Code: 4262**

B.PHARM. DEGREE EXAMINATION

THIRD YEAR

PAPER II – MEDICINAL CHEMISTRY - I

Q.P. Code: 564262

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

Answer All Questions

I. Essay: **(2 x 20 = 40)**

1. a) Derive the synthesis for (i) Halothane (ii) Methohexital sodium.

   b) Describe the Structure Activity Relationship of Phenothiazine.

   c) Define antiepileptics and Classify with example.

2. Explain the following physiochemical parameters related to biological activity with Example.

   a) Bioisosterism b) Ionization c) Geometrical isomerism d) Chelation.

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

1. Describe the isomers and synthesis of Ephedrine.
2. Classify adrenergic antagonists with at-least one structure for each class.
3. Give the Structure Activity Relationship of Morphine.
4. Explain about drug latentiation.
5. Classify local anaesthetics with at-least one structure for each class.
6. Give the Structure Activity Relationship of antihistaminic agents.
7. Give the synthesis and mechanism of actions of Hydrochlorthiazide.
8. Describe the chemistry and clinical uses of Eicosanoids.

III. Short answers: **(10 x 2 = 20)**

1. Draw the structure and medicinal uses of Nalorphine HCl.
2. Define the term Signal transduction.
3. Sketch the structure and medicinal uses of Phenylbutazone.
4. Add a note on Phase-I reaction.
5. Outline the structure and medicinal uses of Galamine triethiodide.
6. Give two examples for Proton pump inhibitors.
7. Draw the structure and medicinal uses of Diazepam.
8. Give any two structures of Cholinergic drug.
9. Sketch the structure and medicinal uses of Nikethamide.
10. Define Anti-tussives and draw any one structure.

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(LI 4262) FEBRUARY 2016 **Sub. Code: 4262**

THIRD YEAR B.PHARM. EXAMINATION
PAPER II – MEDICINAL CHEMISTRY -I

Q.P. Code: 564262

Time: Three hours **Maximum: 100 Marks**

I. Essay: **(2 x 20 = 40)**

1. a) Derive the synthesis for (i) Diazepam (ii) Triclofos sodium.
   b) Explain the structure activity relationship of Barbiturate.
   c) Define antipsychotics and classify with example.

2. Explain the following physiochemical parameters related to biological activity with example.
   a) Drug distribution and pKa Values b) Hydrogen bonding
   c) Geometrical isomerism d) Drug-receptor interaction.

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

1. Give the synthesis and uses of Mephenytoin.
2. Give the structure activity relationship of Local Anaesthetics.
3. Give the Structure Activity Relationship of Thiazides.
4. Describe the different types of reaction in Phase - I.
5. Classify antihistaminic agents with at-least one structure for each class.
6. Draw the structure and give the uses of Morphine, Codeine, Meperidine and Nalorphine.
7. Outline the synthesis of Promethazine HCl and Diphenhydramine HCl.
8. Describe the biosynthesis of Eicosanoids.

III. Short answers: **(10 x 2 = 20)**

1. Draw the structure and medicinal uses of Doxapram HCl.
2. Define the term Neuromuscular blockers.
3. Sketch the structure and medicinal uses of Oxyphenbutazone.
4. Add a note on Prodrugs.
5. Outline the structure and medicinal uses of Tropicamide.
6. Give two examples as Anti-asthmatic drugs.
7. Draw the structure and medicinal uses of Propranolol.
8. Give any two structures of General Anaesthetics.
9. Sketch the structure and medicinal uses of Pyridostigmine.
10. Define Bioisosterism and give one example.

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(LJ 4262) AUGUST 2016 **Sub. Code: 4262**

B.PHARM. EXAMINATION
THIRD YEAR
PAPER II – MEDICINAL CHEMISTRY - I

Q.P. Code: 564262

Time: Three hours **Maximum: 100 Marks**

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

1. Illustrate phase II reaction of Drug Metabolism with suitable example. Discuss the factors affecting Drug Metabolism.

2. Classify H_1 Receptor anti-histamines with example. Explain the SAR of anti-histamines and write the synthesis of Promethazine and Diphenhydramine.

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

1. Write synthesis, mechanism and uses of chlorpromazine and prochlorperazine.
2. Write a note on adrenergic neurotransmitters.
3. Explain the synthesis of propranolol, carbachol.
4. Classify general anesthetics and give the synthesis of any one.
5. Write a note on anticonvulsants.
6. Discuss briefly about Thiazide diuretics.
7. Discuss briefly the methods of development of prodrugs.
8. Explain the chemistry and biological significance of prostaglandins.

III. Short answers on : **(10 x 2 = 20)**

1. Define sedative and hypnotics and give one drug as example for each.
2. Write the SAR of tricycle anti-depressant.
3. Write the structure, mechanism and uses of Haloperidol.
4. Define optical and geometrical isomerism in biological action of drugs.
5. Structure and use of pilocarpine, acetylcholine.
6. Write two structures of opioid analgesic.
7. Write the structure and use of Salsalate and Phenylbutazone.
8. Write the synthesis of procaine.
9. Define anti-tussive agent with examples.
10. Mechanism of action of Acetazolamide.

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(LK 4262) FEBRUARY 2017 **Sub. Code: 4262**

B.PHARM. EXAMINATION
THIRD YEAR
PAPER II – MEDICINAL CHEMISTRY - I

Q.P. Code: 564262

Time: Three hours **Maximum: 100 Marks**

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

1. Explain the following physiochemical parameters related to biological activity with example.
   a) Isosterism b) Hydrogen bonding c) Ionization d) Redox potential.

2. a) Sketch the synthesis for i) Imipramine ii) Nikethamide.
   b) Give detailed account of structure activity relationship of Phenothiazine.
   c) Define general anaesthetics and classify with example.

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

1. Give the route of synthesis and mechanism of action of Clonazepam.
2. Classify diuretics with at-least one structure for each class.
3. Give the structure, synthesis and uses of Dibucaine.
4. Describe the factors affecting metabolism of drugs.
5. Illustrate the structure, synthesis and uses of Chlorcyclizine HCl.
6. Draw any four structures from NSAID's.
7. Describe the chemistry of Eicosanoids.
8. Describe the structure activity relationship of Morphine.

III. Short answers on: **(10 x 2 = 20)**

1. Draw two structures of adrenergic neurotransmitters.
2. Give two examples for neuromuscular blockers and mention their uses.
3. Sketch the structure and medicinal uses of Salbutamol and Terbutaline.
4. Give two examples for Prodrugs.
5. Outline the structure and medicinal uses of Atenolol and Prazosin.
6. Add a note on neurochemistry of cholinergics.
7. Give the reaction product of malonic ester and urea.
8. Give any two structures of drugs used as anti-ulcer.
9. Sketch the structure and medicinal uses of Homatropine HBr.
10. Outline the structure and uses of Noscapine.

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(LL 4262) AUGUST 2017 **Sub. Code: 4262**

B.PHARM. DEGREE EXAMINATION
THIRD YEAR
PAPER II – MEDICINAL CHEMISTRY – I

Q.P. Code: 564262

Time: Three hours **Maximum: 100 Marks**

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

1. a) Define Receptor and discuss the theories involved in Drug Receptor complex.
   b) Explain the different types of reaction in phase I metabolic pathways.

2. a) Discuss the classification, mode of action and SAR of NSAIDs.
   b) Give the synthesis for Indomethacin, Ibuprofen and Phenylbutazone.

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

1. Write about applications of prodrug design.
2. Classify sedative and hypnotics with examples and give the synthesis of diazepam.
3. Write a note on: i) Isosterism ii) Hydrogen bonding.
4. Define CNS stimulants and give the synthesis for:
   i) Nikethamide ii) Imipramine HCL.
5. Discuss Sympathomimetic agents and give the synthesis of salbutamol.
6. Explain in detail about antihistaminic agents.
7. Discuss SAR of barbiturates.
8. Define and classify diuretics with suitable examples.

III. Short answers on: **(10 x 2 = 20)**

1. Define the term Tranquilliser.
2. Structure and uses of methohexital sodium.
3. Synthesis of Mephenytoin.
4. Write the structures of Homatropine HBr and Tropicamide.
5. Note on Neuromuscular blockers.
6. Define Anti-tussive agents.
7. Mode of action of Halothane.
8. Structure and use of Naproxen.
9. Note on Prostaglandins.
10. H_2 receptor antagonists.

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(LM 4262) FEBRUARY 2018 **Sub. Code: 4262**

B.PHARM. DEGREE EXAMINATION
0THIRD YEAR
PAPER II – MEDICINAL CHEMISTRY – I

Q.P. Code: 564262

Time: Three hours **Maximum: 100 Marks**

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

1. Explain the following physiochemical parameters related to biological activity with example.
   a) Chelation b) Steric effect c) Optical isomerism d) Surface activity

2. a) Define Sedative and Hypnotics? Classify with example.
   b) Give detailed account of structure activity relationship of Sympathomimetics.
   c) Outline the synthesis for: (i) Prochlorperazine Maleate ii) Ketamine HCl.

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

1. Describe the metabolism of adrenergic neurotransmitters.
2. Relate the structural features of Acetylcholine, Carbachol, Bethanechol and Methacholine.
3. Give four structures of Neuromuscular blockers.
4. Outline the synthesis of Naproxen and Ibuprofen.
5. Give the route of synthesis of Amiloride and Frusemide.
6. Draw any four structures of anti-histamines.
7. Give the synthesis and mechanism of action of Doxapram HCl.
8. Classify anti-convulsants with at-least one structure for each class.

III. Short answers on: **(10 x 2 = 20)**

1. Draw the structure and medicinal uses of Meperidine HCl.
2. Define the term Eicosanoids.
3. Sketch the structure and medicinal uses of Morphine analogues.
4. Write a note on Omeprazole and Lansoprazole.
5. Outline the structures of Mephenytoin and Trimethadione.
6. Explain about Prodrugs.
7. Draw two structures of Cholinergic blocking agents.
8. Define the term Local anaesthetics with two examples.
9. Sketch two structures of anti-hypertensive.
10. Give two reactions of Phase-I Metabolism.

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

(LN 4262) AUGUST 2018 **Sub. Code: 4262**

B.PHARM. DEGREE EXAMINATION
THIRD YEAR
PAPER II – MEDICINAL CHEMISTRY – I

Q.P. Code: 564262

Time: Three hours **Maximum: 100 Marks**

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

1. Discuss the various types of Phase-I biotransformation pathways and the role of Cytochrome P450 enzyme system in Phase-I biotransformation.
2. a) Classify local anaesthetic agents and discuss the SAR of Local anaesthetic agents.
   b) Illustrate the structure, synthesis, and uses of Atenolol and Acetazolamide.

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

1. Discuss the drug-receptor theory.
2. Write the structure, synthesis and uses of Carbamazepine.
3. Classify Diuretics with examples.
4. Illustrate the synthesis of Cyclizine hydrochloride and SAR of Piperazine derivatives.
5. Illustrate the structure, synthesis and uses of Fentanyl citrate.
6. Discuss biosynthesis and metabolism of Adrenergic Neurotransmitters.
7. Write the structure, synthesis and uses of Cimetidine.
8. Illustrate the structure, synthesis, and uses of Dextroamphetamine.

III. Short answers on: **(10 x 2 = 20)**

1. Give the structure and uses of Halothane.
2. Structure and uses of Methyldopa.
3. Write structure, and uses of Pheniramine maleate.
4. Eicosanoids.
5. Structure and uses of Noscapine.
6. General Anaesthetics.
7. Structure and uses of Piroxicam.
8. Define Antipsychotics agents with examples.
9. Cholinergic Blocking agents.
10. Catechol derivatives.

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

(LO 4262) FEBRUARY 2019 **Sub. Code: 4262**

B.PHARM. DEGREE EXAMINATION
THIRD YEAR
PAPER II – MEDICINAL CHEMISTRY – I

Q.P. Code: 564262

Time: Three hours **Maximum: 100 Marks**

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

1. a) Explain the physicochemical parameters related to biological activity with examples for the following: a) Bio-isosterism b) Ionization
   b) Summarize stereochemistry of acetyl choline and its analogue.
2. a) Classify Antihistaminic agents. Describe the SAR of Ethylene diamine derivatives.
   b) Discuss the SAR of Benzodiazepines and Barbiturates derivatives as sedatives and hypnotics agents.

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

1. Illustrate the structure, synthesis and uses of Nikethamide.
2. Write the structure, synthesis and uses of Procaine.
3. Outline the Prostaglandin Biosynthesis pathway.
4. Discuss the applications of Prodrug.
5. Illustrate the synthesis of Phenylbutazone and SAR of Pyrazolone derivatives.
6. Discuss the factors that influence the metabolic rate of drug.
7. Write the structure, synthesis and uses of Meperidine hydrochloride.
8. Illustrate the structure, synthesis and uses of Diphenhydramine hydrochloride.

III. Short answers on: **(10 x 2 = 20)**

1. Give the structure and uses of Valproic Acid.
2. Define seizures and its types.
3. Phase-I biotransformation.
4. Write structure, and uses of Salbutamol.
5. Ganglionic Blockers.
6. Imipramine hydrochloride.
7. General Anaesthetics.
8. Thiazide derivatives.
9. Sedatives and hypnotics agents.
10. Anti-tussive.

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