

APRIL - 1993

[RS 558]

FOURTH B.Pharm. DEGREE EXAMINATION.

(Old Regulations)

Paper I — MEDICINAL CHEMISTRY—SYNTHETIC DRUGS

Time : Three hours

Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.

1. Outline a method each for the synthesis of the following and give their specific uses : (5 × 4 = 20)

- (a) Phenobarbitone.
- (b) Pethidine.
- (c) Benzocaine.
- (d) Acetazolamide.
- (e) Nitrazepam.

2. Enumerate the important antitubercular drugs. Outline the synthesis of any two. Discuss the problems associated with the chemotherapy of tuberculosis and how it can be solved. (4 + 5 + 5 + 6 = 20)

3. What are antihistaminics? Classify them giving the structural formulae of official compounds. Outline the synthesis of any one drug. Show the important structural feature that is required for antihistaminic activity. (5 + 5 + 5 + 5 = 20)

4. Citing suitable examples show how the following physical properties of drug molecules can influence the biological action : (6 + 8 + 6 = 20)

- (a) Partition coefficient.
- (b) Hydrogen bonding.
- (c) Chelation.

5. Discuss in detail the synthesis of the following and give their specific uses in therapy : (5 × 4 = 20)

- (a) Dilantin sodium.
- (b) Sulphamethoxazole.
- (c) Bephenium Hydroxy naphthoate.
- (d) Bethanidine sulphate.
- (e) Chloroquine phosphate.

6. (a) What are the recent non-steroidal anti-inflammatory agents used in therapy? Give a suitable classification and discuss the synthesis of any two.

- (b) Discuss the mechanism of Carbonic anhydrase inhibition. Give two examples of drugs eliciting the above action. (12 + 8 = 20)

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7. Given below are some important synthetic drugs which are official in Indian Pharmacopoeia. Categorise them as per their therapeutic activity and give their structural formulae/chemical nature. (10 × 2 = 20)

- (a) Amantadine Hydrochloride.
 - (b) Amodiaquine Hydrochloride.
 - (c) Metamizol.
 - (d) Bendroflnazide.
 - (e) Busulphan.
 - (f) Carbamazepine.
 - (g) Clofazimine.
 - (h) Niclosamide.
 - (i) Nitrofurantoin.
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[PR 175]

FOURTH B.Pharm. DEGREE EXAMINATION.

(Old Regulations)

Paper I — MEDICINAL CHEMISTRY — SYNTHETIC DRUGS

Time : Three hours

Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.

1. Outline a method each for the synthesis of

- (a) Amantadine hydrochloride.
- (b) Busulphan.
- (c) Chloroquine Phosphate.
- (d) Clofazimine.
- (e) Nitrofurantoin.

Give their specific uses.

(5 × 4 = 20)

2. (a) Discuss a general method for the synthesis of sulpha drugs. Give their mechanism of action. (8)

(b) Write a brief account on the chemical nature of various anticancer drugs, which are currently used in therapy. (12)

[PR 175]

3. What are Hypnotics and Sedatives? Classify them giving the structural formulae of different drugs. Discuss the SAR of Barbiturates. Outline the synthesis of Barbitone and Phenobarbitone. (4 + 5 + 5 + 6)

4. Show how the following Physico Chemical properties of drug molecules can influence the biological action.

(6 + 3 + 6 = 20)

- (a) Steric relationship.
- (b) Isosterism.
- (c) Hydrogen bonding.

5. Discuss in detail the synthesis of the following :

(5 × 4 = 20)

- (a) Nitro furazone.
- (b) Paracetamol.
- (c) Pethidine.
- (d) Phenindamine tartrate.
- (e) Primaquine Phosphate.

Give their specific uses in therapy.

6. (a) Enumerate the important oral antidiabetic drugs. Outline the synthesis of any one. (14)

(b) What are diuretics? Show how carbonic anhydrase inhibitors act. (6)

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[PR 175]

7. Listed below are some synthetic drugs. Categorise them as per their therapeutic activity. Give their specific indications, structural formulae/chemical nature. (10 × 2 = 20)

- (a) Bephinium hydroxy naphthoate.
 - (b) Bethanidine sulphate.
 - (c) Nitrazepam.
 - (d) Primidone.
 - (e) Procainamide.
 - (f) Prochlorperazine maleate.
 - (g) Dextropropoxyphene Napsylate.
 - (h) Pyrimethamine.
 - (i) Triamterene.
 - (j) Trimethoprim.
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[ND 507]

FOURTH B.Pharmacy DEGREE EXAMINATION

(New Regulations)

**Paper I – MEDICINAL CHEMISTRY
SYNTHETIC DRUGS**

Time : Three hours

Maximum : 90 marks

Two and a half hours

for Sections A and B

Sections A and B : 60 marks

Answer Section A and B in separate answer book.

Answer Section C in the answer sheet provided.

SECTION A – (2 × 15 = 30 marks)

Answer any TWO questions.

1. (a) What are tranquilizing agent? Write their chemical classification with examples.

(b) Write the structure activity relationship of Phenothiazine group of tranquilisers.

(c) Write the synthesis of

(i) Promethazine (2) Diazepam (3) Haloperidol.

2. (a) Differentiate between H_1 antagonists and H_2 -antagonists.

(b) Classify H_1 antagonists with examples.

(c) Write the synthesis of

(i) Cimetidine (ii) Diphenhydramine (iii) Mepyramine.

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(c) Explain the mechanism of action of sulfonamides used antibacterial agents.

(b) Write the synthesis and clinical uses of

(i) Sulfadiazine (ii) Sulfaguanidine (iii) Tolbutamide.

(a) What are the characteristics of an ideal local anaesthetic?

(b) Classify them with examples.

(c) Write the synthesis of

(i) Lidocaine (ii) Procaine (iii) Hexobarbital.

SECTION B – (6 × 5 = 30 marks)

Answer any SIX questions.

Write the synthesis and use of Ibuprofen.

Write the structures of narcotic analgesics. Write the synthesis of a synthetic narcotic analgesic.

Explain the mechanism of action of Anti-inflammatory agents.

Explain the role of hydrogen bonding of a compound in its local activity. Give example.

Classify anticonvulsant drugs with examples and write the synthesis of any one of them.

Write the mechanism of action and synthesis of roseamide.

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[ND 597]

11. Write the classification of antihypertensive agents with examples. Write the synthesis of any one of them.
 12. Write the names and structures of 4-aminoquinolines used as antimalarials. Write the synthesis of any one of them.
 13. Write a notes on antineoplastic agents of Antimetabolites group.
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APRIL - 1995

[S# 597]

Fourth B. Pharmacy Degree Examination

(Old Regulations)

Paper I - MEDICINAL CHEMISTRY SYNTHETIC DRUGS

Time: Three hours Maximum: 100 marks

Answer any Five questions
All questions carry equal marks

1. a) Discuss in detail the effect of hydrogen bonding and partition coefficient on the biological activity, with the help of suitable examples.
b) Define and classify general anaesthetic agents with examples. Give the synthesis of VINYL ETHER and HALOTHANE. (10+10)
2. Give the synthesis and specific use of any four of the following drugs,
 - a) Isonicotinic acid Hydrazide
 - b) Ibuprofen
 - c) sulfisoxazole
 - d) Triprolidine
 - e) Halopiridol(4 x 5 = 20)
3. Give a brief account of carbonic Anhydrase inhibitors as diuretic agents. Give the synthesis of Acetazolamide and chlorthiazide. Give the mechanism of action. (6+6+8)
4. a) Give the structure activity relationship of phenothiazines. Give the synthesis of chlorpromazine or perphenazine. (12+8)
b) Classify anti-inflammatory agents with examples. Give the synthesis of indomethacin and mefenamic acid. (6+7+7)
5. a) Classify antihypertensive drugs with examples and give the synthesis of Hydralazine and methyldopa (4+3+3)
b) Classify different anti neoplastic drugs with examples. Give the mechanism of action of alkylating agents. (5+5)
6. a) Classify different anticonvulsant drugs and give the synthesis of phenytoin and phenobarbitone. (4+3+3)
b) What are the different classes of drugs acting on cardio vascular system. Write a brief note on reserpine and propranolol. (4+3+3)
7. Write short notes on any FOUR of the following
 - a) Anthelmintics
 - b) Antipyretic drugs
 - c) Antileprotic drugs
 - d) Sulfonamides
 - e) Fungicides(5x4=20)

APRIL - 1995

[SB 602]

Fourth B. Pharm. Degree Examination
(New Regulations)

Paper I - MEDICINAL CHEMISTRY SYNTHETIC DRUGS

Time : Three hours Maximum : 90 marks

Two and a half hours
for Sections A and B Sections A and B : 60 marks

Answer Sections A and B in separate answer books.

Answer Section C in the answer sheet provided

SECTION—A (2×15=30)

Answer any TWO questions

1. a) Define and classify analgesic and antipyretic drugs with examples.
b) Give the synthesis of
 - i) Acetaminophen
 - ii) Ibuprofen
 - iii) Oxyphenbutazone (6+9=15)
2. a) Classify antihypertensive drugs with examples.
b) Give the synthesis of
 - i) Minoxidyl
 - ii) Methyl dopa
 - iii) Hydralazine
 - iv) Pargylin (5+10=15)
3. a) Classify antimalarial drugs with examples
b) Give the synthesis of
 - i) Pyrimethamine
 - ii) Chloroquine
 - iii) Primaquine (6+9=15)

4. a) Classify alkylating agents used as anti cancer drugs, with examples and give their mechanism of action
b) Give the synthesis of
 - i) Chlorambucil
 - ii) Cyclophosphamide (9+6=15)

Section B (6 X 5 = 30)

Answer any SIX questions

5. Write the structure activity relationship of barbiturates.
6. Define and classify anticonvulsants and give the synthesis of Phenobarbitone.
7. Give the synthesis of procaine and xylocaine and write briefly about their mechanism of action
8. What are the various sulfadugs used in burn therapy? Give the synthesis of silver sulfadiazine
9. Give the structure of any four different anti histaminic agents and give the synthesis of chlorpheniramine maleate.
10. Write a note on oral antidiabetic drugs and give the synthesis of tolbutamide.
11. Classify anthelmintic drugs with examples and give the synthesis of Diethylcarbamazine citrate.
12. Write about the chemotherapy of leprosy and give the synthesis of dapsone.
13. Classify tranquilizing agents and give the synthesis of chlorpromazine.

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MB 729

FOURTH B.PHARM DEGREE EXAMINATION

(Old Regulations)

**Paper I - MEDICINAL CHEMISTRY SYNTHETIC
DRUGS**

Time: Three hours

Max. 100 marks.

Answer any Five questions.

All questions carry equal marks.

1. Discuss the relationship between biological activity and the following physico-chemical properties of drugs taking suitable examples.

- a). Partition coefficient
- b). Stereo-isomerism
- c). Chelation

2. Give the chemical classification of antimalarial drugs. Outline the synthesis of any three drugs each belonging to different group.

3. Give a brief account of antiseptics and disinfectants outline the synthesis of

- a). Crystal violet
- b). Proflavine
- c). Methylene blue.

4. Furnish the chemical name, synthesis and uses of the following

- a). Phenytoin
- b). Dapsone
- c). Isoniazide
- d). Tolbutamide
- e). Guanethidine

5. What are local anaesthetics. How do they differ from general anaesthetics. Name the local anaesthetics containing quinoline and piperidine nuclei and outline their synthesis.

6. Classify antihistaminics and discuss their structure, activity relationship. Give the synthesis of

- a). Chlorocyclizine
- b). Diphenhydramine
- c). Pyribenzamine

7. How would you convert the following (Use any other reagents if need be)

- a). M - chloroaniline and N₁, N₁-diethyl 1,4 pentene diamine into an antimalarial drug.
- b). P - Toluene sulfonamide to an orally active hypoglycemic agent.
- c). 3 - methoxy, 4 - hydroxy phenyl acetone into an hypertensive agent
- d). Ethyl methyl ketone and ethylecyano acetate into an anticonvulsant drug.
- e). 2,6 - xylydine to a local anaesthetic agent.

NOVEMBER - 1995

[MB 734]

Fourth B. Pharm Degree Examination

(New Regulations)

**Paper I - MEDICINAL CHEMISTRY SYNTHETIC
DRUGS**

Time : Three hours Maximum : 90 marks
Two and a half hour Sec. A and B : 60 marks
for Sec. A and B

SECTION - A (2×15=30)

Answer any TWO questions

1. a) What are tranquilizers? Give the general structure for phenothiazine agents. (2+3)
b) Discuss the relationship between structure and activity of phenothiazine tranquilizing agent. (5)
c) Suggest a synthesis for chlorpromazine. (5)
2. a) Define the term antibiotic. Discuss the chemistry of degradation of penicillins. (2+3)
b) What are the objectives in preparing semisynthetic penicillins? (5)
c) Describe the chemistry involved in the assay of Benzyl penicillin. (5)

3. Reason the following :

- a) Barbituric acid and its monosubstituted derivatives are biologically inactive.
- b) 1-phenyl-3-dimethyl-5-pyrazolone show no analgesic activity; on the other hand, 1-phenyl-2, 3-dimethyl-5-pyrazolone (antipyrine) exhibit analgesic action.
- c) 8-Mercaptoquinoline show antibacterial activity where as 8-Hydroxyquinoline-5-sulfonic acid is inactive.
- d) The neuromuscular blocking agent Hexafluorenum is relatively ineffective in the unanaesthetised animal. However, in the presence of anaesthesia with lipophilic anaesthetics, potent blockade of muscular function occurs. (4×3½)

4. a) Name the different therapeutic applications of sulfa drugs. Explain the antibacterial action (mechanism) of sulfa drugs.
b) Comment on the SAR of sulfa drugs.
c) Outline a synthesis each for
i) Solapstone
ii) Sulfafurazole (3×5)

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SECTION—B (6×5 = 30)

Answer any SIX questions

- 5. Hydrogen bonding influence biological activity- Justify, citing suitable examples.**
- 6. How do carbonic anhydrase inhibitors act as diuretics? Explain with examples.**
- 7. Name local anaesthetics belonging to xylicaine group. Give the synthesis of Lignocaine.**
- 8. Classify oral hypoglycemic agents giving important examples. Outline the synthesis of any one of them.**
- 9. Outline a specific method for the preparation of phenobarbitone.**
- 10. What are the major obstacles in the development of effective drugs against viral diseases. Give a short account of antiviral agents.**
- 11. Classify antineoplastic agents with examples. Write an explanatory note on the mechanism of action of alkylating agents.**
- 12. Outline synthetic route for the preparation of the following drugs and indicate their specific use**
 - I) Ethionamide**
 - II) Furosemide**
- 13. Write the synthesis of Ibuprofen and indicate its therapeutic use.**

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AK 734

Fourth B.Pharm Degree Examination
(Old Regulations)
Paper I - MEDICINAL CHEMISTRY
SYNTHETIC DRUGS

Time : Three hours

Max. 100 Marks.

Answer Section A and B in separate answer books.

All questions carry equal marks.

Answer any five questions

1. a) Classify antiprotozoal drugs giving examples in each class.
b). Discuss the structure activity relationship of aminoquinolines.
c). Outline a synthetic route for the preparation of each of the following:
i). Thiabendazole
ii). Metronidazole
iii). Carbarsone (3+5+12=20)
2. Give the structure of the heterocyclic system present in each of the following drug molecule and indicate their therapeutic use.
a). Nikethamide b). Benzhexol
c). Clioquinol d). Oxyphenbutazone
e). Mebendazole f). Antazoline
g). Pyrazinamide h). Chlorcyclizine
i). Nitrazepam j). Phenobarbitone (10 X 2 = 20)
3. a) What are hypoglycemic agents?
b) Discuss briefly the various synthetic hypoglycemic drugs, with examples.

- c) Suggest a synthetic route for the preparation of
i). Chlorpropamide ii). Phenformin
d) Write the principle involved in the assay of tolbutamide
the necessary equations. (

4. Outline a method each for the synthesis of
a. Diethylcarbamazine b. Guanethidine
c. Paracetamol d. Primaquine
e. Chlorpheniramine
5. a). Classify the cardiovascular agents with suitable examples.
Indicate their therapeutic uses.
b). Write a note on the mechanism of action of captopril.
c). Give the synthesis of each of the following:
i). Lidocaine
iii). Clofibrate
6. Discuss in detail the synthesis of the following.
a). Cyclobarbitone b). Phenylbutazon
c). Diphenhydramine d). Acetazolamide
e). Furosemide
7. Briefly discuss the following:
a). The mode of action of mercurial diuretics
b). Ring analog of phenothiazine
c). Synthetic antitubercular agents with examples
d). Principle involved in the chemical assay of isoniazid
e). Structure and biological activity of barbiturates

APRIL - 1996

[AK 739]

Subject Code : 4218

Fourth B.Pharm Degree Examination

(New Regulations)

**Paper I - MEDICINAL CHEMISTRY
SYNTHETIC DRUGS**

Time : Three hours Maximum : 80 marks
Two and a half hours Sec. A and B : 60 marks
for Section A and B

Answer Sections A and B in separate answer books.
Answer Section C in the answer sheet provided

SECTION - A (2×15=30)

1. a) Classify diuretics. Give example for each class.
b) Explain the mode of action of sulfonamide diuretics.
c) Suggest a synthesis for chlorthalidone.
2. a) What are sedative-hypnotic drugs? Classify with examples.
b) What structural features are essential for barbiturates to exhibit sedative-hypnotic activity. Discuss.
c) Outline a synthetic route for the preparation of phenobarbitone.
3. a) Classify antihypertensive agents according to site of action and give examples.
b) Discuss various chemotherapeutic tools employed to treat patients with hypertension.
c) Outline a method for the synthesis of
 - i) Guanidine
 - ii) Clonidine
 - iii) Diazoxide

4. a) What are antiallergic agents?
b) Discuss the structural features and chemistry of ethylene type of antihistaminic drugs.
c) Suggest a method for the preparation of
 - i) Antazoline
 - ii) Triprolidine
 - iii) Diphenylhydramine

SECTION—B (6X5=30)

Answer any SIX questions

5. Ionization influence biological activity of closely related compounds. Comment
6. Suggest a method for the synthesis of Chloramphenicol.
7. What are anthelmintics? Classify on the basis of structure, giving example for each group
8. Discuss the structure activity relationship of Butyrophenones.
9. Write a note on synthetic antifungal agents.
10. Name different therapeutic application of sulfa drugs. Explain the mechanism of antibacterial action of sulfa drugs
11. Give a short account of the peripheral modifications carried out on the Morphine molecule and its objectives.
12. With the help of Henderson-Hasselbach equation, explain the absorption of weakly acidic and basic drugs from the stomach and intestine.
13. Describe the synthesis and clinical use of the following drugs
 - i) Phenytoin
 - ii) Oxazepam

APRIL - 1996

[AK 745]

Subject Code : 4198

Third B. Pharm Degree Examination

(Revised Regulations)

Paper II - CHEMISTRY OF SYNTHETIC DRUGS

Time : Three hours

Max. : 90 marks

Two and a half an hours

for Section A and B

Sec. A and B : 60 marks.

Answer Section A and B in separate answer books.

Answer Section C in the answer sheet provided.

SECTION - A (2×15 = 30)

Answer any TWO questions.

1. a) Classify Barbiturates with one example for each class according to the duration of action.
b) Give the structure activity relationship of barbiturates.
c) Suggest one method for the synthesis of phenobarbitone. (3X5 = 15)
2. a) Define local anesthetic drugs and classify them. Give one example for each class.
b) What are the requirements for an ideal local anaesthetic? Write briefly on mode of action of local anesthetics
c) Give one method for the synthesis of xylocaine and mention its uses and storage conditions. (3X5 = 15)

3. a) Define the term tranquilisers. Classify phenothiazine group of tranquilisers with examples.
b) Discuss the structure Activity-Relationship of phenothiazines.
c) Give one method for the synthesis of prochlorperazine. (5+2+8 = 15)
4. a) Classify diuretic drugs with examples. Write briefly, the mode of action of mercurial diuretics. (5+2)
b) Suggest a method for the synthesis of (8)
i) Triamterene and
ii) Furosemide

SECTION—B (6X5=30)

Answer any SIX questions.

5. Give the structure, medicinal uses and a method for the assay of nikethamide,
6. Give the structure, medicinal use and one method for the synthesis of Amodiaquine.
7. Give a scheme for the synthesis of diloxanide furoate and the medicinal uses.
8. Give the chemical structure and one method for the assay of acetazolamide, and mention the different medicinal uses.
9. Give the structure and medicinal uses of isoniazid. How is it prepared in the laboratory.
10. Give the structure, uses and a method for the synthesis of Imipramine hydrochloride.
11. Define the term prodrug and give one example. Give the structure, medicinal uses of phthalyl sulfathiazole.
12. Give the structure, uses and one method for the synthesis of Triprolidine Hydrochloride.
13. Give the structure, medicinal uses and one method for the assay of nitrazepam.

OCTOBER - 1997

[MS 720]

Sub. Code : 4202

THIRD B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper II — CHEMISTRY OF SYNTHETIC DRUGS

Time : Three hours

Maximum : 90 marks

Two and a half hours
for Sections A and B

Sections A & B : 60 marks
Section C : 30 marks

Answer Sections A and B in separate answer books.

Answer Section C in the answer sheet provided.

SECTION A — (2 × 15 = 30)

Answer any TWO questions.

1. (a) What are sulphonamides?
(b) Classify them with examples and explain in brief the mode of action.
(c) Give the synthesis and uses of
(i) Sulphisoxazole (ii) sulphadiazine
2. (a) Enumerate the different phenothiazine derivatives used as tranquillising agents along with their structure.
(b) Write the synthesis and therapeutic uses of
(i) Promazine hydrochloride
(ii) Trifluoperazine hydrochloride
(iii) Thoridazine hydrochloride.
3. (a) What are local anaesthetics? Classify them with examples.
(b) Give the method of synthesis, tests for purity and assay of procaine hydrochloride.

[MS 720]

4. Write short notes on :

- (a) Ultra short acting barbiturates.
- (b) Antiseptic dyes.

SECTION B — (6 × 5 = 30)

Answer any SIX questions.

5. Give the structure, medicinal uses and assay of chloroquine phosphate.
6. Give the method of synthesis and medicinal uses of Nitrofurantoin.
7. Explain the principle involved and procedure adopted in the assay of Nikethamide.
8. Outline the ideal properties of a local anaesthetic.
9. What is meant by H₁ and H₂ antagonists? Classify them chemically.
10. Explain in brief the structure and assay of phenobarbitone.
11. Sulphonamides used in urinary infections.
12. Give the method of preparation and medicinal uses of Imidazole derivatives used as nasal decongestant.
13. Give the method of synthesis and uses of oxyphenbutazone.

[MS 725]

Sub. Code : 4216

FOURTH B.Pharm. DEGREE EXAMINATION.

(New Regulations)

Paper I — MEDICINAL CHEMISTRY, SYNTHETIC DRUGS

Time : Three hours	Maximum : 90 marks
Two and a half hours	Sec. A & B : 60 marks
for Sec. A and B	Section C : 30 marks

Answer Sections A and B in separate answer books.

Answer Section C in the answer sheet provided.

SECTION A — (2 × 15 = 30 marks)

1. (a) Classify Diuretics, giving examples.
(b) Discuss the mechanism of action of furosemide.
(c) Discuss the SAR of Mercurial diuretics. (3 + 5 + 7)
2. (a) Define and classify Anaesthetics.
(b) Discuss the SAR in Local Anaesthetics.
(c) Name the local anaesthetics containing quinoline and piperidine nucleus and outline the synthesis of one member from each group. (4 + 5 + 6)
3. Define chemotherapy. Explain the different stages that led to the development of chemotherapy. What do you understand by selective toxicity? Discuss in detail Woods and Fildes theory of Antimetabolites with examples. (15)

[MS 725]

4. (a) Classify the barbiturates on the basis of duration and onset of action with examples.
(b) Discuss the SAR in barbiturates.
(c) Outline the synthesis of
(1) Cyclobarbitone (2) Thiopentone sodium.
(4 + 5 + 6)

SECTION B — (6 × 5 = 30 marks)

Answer any SIX questions.

5. Discuss the mechanism of action of sulpha drugs as antibacterials.
6. Give a brief account of Anthelmintics.
7. Give the synthetic route and clinical use of
(a) Triprolidine (b) Meprobamate.
8. Outline a synthetic route for any two H₁ receptor antagonists.
9. Write a brief note on Anti convulsant drugs.
10. Write a note on the clinical utility of Benzodiazepine derivatives.
11. Explain how Hydrogen bonding influences the Biological activity of some compounds.
12. Write a brief account of anti cancer drugs.
13. Explain what is hypertension and how diuretics help in the treatment of Hypertension.

APRIL - 1998

[SV 720]

Sub. Code : 4202

THIRD B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper II — CHEMISTRY OF SYNTHETIC DRUGS

Time : Three hours

Maximum : 90 marks

Two and a half hours

Sec. A & Sec. B : 60 marks

for Sec. A and Sec. B

Section C : 30 marks

Answer Sections A and B in separate answer books.

Answer Section C in the answer sheet provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. (a) Classify diuretics with one example (structure) for each class.
(b) Explain the mechanism of action of Mercurials.
(c) Give the synthesis of mersalyl and chlorthalixide.
2. (a) Classify Barbiturates on the basis of duration and onset of action with examples.
(b) Discuss the SAR in Barbiturates.
(c) Outline the synthesis of
(i) Cyclobarbitone
(ii) Thiopentone Sodium.
3. (a) Explain the rational of multi drug therapy in the treatment of Leprosy.
(b) Classify the antitubercular drugs with examples.
(c) Give the synthesis, mechanism of action and uses of (i) Ethionamide (ii) I.N.H.

4. (a) What are anti allergic agents?

(b) Discuss the structural features and chemistry of ethylenediamine type of antihistaminic drugs.

(c) Outline a method for the synthesis of Antazolins and chlorocyclizine.

SECTION B — (5 × 5 = 30 marks)

Answer any SIX questions.

5. Discuss the mechanism of action of sulfa drugs as antibacterials.
6. Write a note on the relationship between biological action and Hydrogen bonding.
7. Enumerate the names and structures of alkylating agents used in cancer chemotherapy and comment on their mode of action.
8. List the names of anthelmintic drugs in clinical use and write the structures of four such drugs.
9. Write a short note on anticholesteremic agents.
10. Write a short note on diagnostic agents and give the synthesis of fluorescein.
11. Explain in detail the significance of oral-hypoglycemic agents and outline a method of synthesis for any one of them.
12. Enumerate the different diseases caused by Protozoa. Compare the mode of action of Trimethoprim and Pyrimethamine.
13. What are Local Anaesthetic agents? Classify them with suitable examples. Outline a method of synthesis for any one of them.

[SV 725]

Sub. Code : 4216

FOURTH B.Pharm. DEGREE EXAMINATION.

(New Regulations)

Paper I — MEDICINAL CHEMISTRY, SYNTHETIC DRUGS

Time : Three hours Maximum : 90 marks

Two and a half hours Sec. A & Sec. B : 60 marks

for Sec. A and Sec. B Section C : 30 marks

Answer Sections A and B in separate answer books.

Answer Section C in the answer sheet provided.

SECTION A — (2 × 15 = 30 marks)

1. (a) Discuss briefly the chemistry and classification of antiarrhythmic agents with examples.

(b) Classify antimalarials giving examples.

(c) Outline the synthesis of (i) chloroquine (ii) primaquine. (6 + 3 + 6)

2. (a) Define and classify Hypnotics and sedatives giving examples.

(b) Classify the barbiturates on the basis of duration and onset of action with examples.

(c) Give the synthesis of (i) Phenobarbital (ii) Diazepam. (6 + 3 + 6)

3. Biological activity of drug is dependent not only on its chemical structure but also on its physico-chemical properties.

Explain the above statement with the help of

(a) Hydrogen bonding (b) Partition coefficient (c) Chelation (d) Redox-potential.

4. Write notes on the mechanism of action of

(a) Sulphonamides.

(b) Local anaesthetics. (8 + 7)

SECTION B — (6 × 5 = 30 marks)

Answer any SIX questions.

5. Explain the role of ionisation and partition coefficient in the biological action of drugs.

6. Give the synthesis of

(a) Phenytoin (b) Benzocaine.

7. Write a brief note on antidiabetic drugs.

8. Discuss briefly antiamoebic drugs.

9. What are tranquilizers? Give the synthesis of any one of them.

10. Write a note on antiinflammatory salicylic acid derivatives.

11. Explain the role of redox potential and bioisosterism in biological activity.

12. Give the synthesis of any two anticancer drugs.

13. Write an account of diuretics.

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[SM 725]

Sub. Code : 4216

FOURTH B.Pharm. DEGREE EXAMINATION,

(New Regulations)

Paper I — MEDICINAL CHEMISTRY OF SYNTHETIC
DRUGS

Time : Three hours

Maximum : 90 marks

Two and half hours

Sec. A & Sec. B : 60 marks

for Sec. A and Sec. B

For Sec C : 30 marks

Answer Sections A and B in separate answer books.

Answer Section C in the answer sheet provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. What are diuretics, what is their mechanism of action?
Give a list of official drugs which act as diuretics. Give the
synthesis of furose mide. (15)

2. Give the classification of antimalarials and give the
synthesis of pamaquine and mepacrine. (15)

3. Explain the mechanism of action of sulfonamides as
bacteriostatic agents. How will you classify sulfonamides?
Give the synthesis of (15)

(a) Sulphamethoxazole

(b) Trimethoprim.

SECTION B — (6 × 5 = 30 marks)

Answer any SIX questions.

4. Synthesis of antiparkinsonism drugs.
 5. Malarial life cycle.
 6. Synthesis of chloramphenicol.
 7. Pyridine containing drugs.
 8. Barbiturates.
 9. Local anaesthetics.
 10. Antihistamines.
- _____

APRIL - 1999

[SG 720]

Sub. Code : 4208

THIRD B.Pharm. DEGREE EXAMINATION.

(Re-Revised Regulations)

Paper II — CHEMISTRY OF SYNTHETIC DRUGS
(RRR)

Time : Three hours

Maximum : 90 marks

Two and a half hours

Sec. A & Sec. B : 60 marks

for Sec. A and Sec. B

Section C : 30 marks

Answer Sections A and B in separate answer books.

Answer Section C in the answer sheet provided.

Answer any TWO questions from Section A.

Answer any SIX questions from Section B.

SECTION A — ($2 \times 15 = 30$ marks)

1. "Biological activity of a drug is dependent not only on its chemical structure but also on its chemical structure but also on its physico-chemical properties".

(3)

Explain the above statement with the help of

(a) Hydrogen bonding

(b) Partition co-efficient

(c) Chelation IV Redox-Potential. (3 × 4)

2. (a) Classify alkylating agents used as an anticancer drugs with example and give their mechanism of action.

(b) Give the synthesis of

(i) Chlorambucil.

(ii) Cyclophosphamide.

3. (a) Discuss briefly the chemistry and classification of antiarrhythmic agents with examples. (5)

(b) Outline the synthesis of

(i) Propranolol

(ii) Hydralazine hydrochloride. (5 + 5)

4. (a) Classify antimalarial drugs with examples. (3)

(b) Give the synthesis of (3 × 4)

(i) Pyremethamine.

(ii) Chloroquine.

(iii) Primaquine.

SECTION B — ($6 \times 5 = 30$ marks)

5. Define and classify anticonvulsants. Give the synthesis of phenobarbitone.

6. Give the synthesis of procaine and xylocaine and write briefly the mechanism of action.

7. Write a note on oral antidiabetic drugs and give the synthesis of Tolbutamide.

8. Write the synthesis of medicinal uses of Ethosuximide.

9. Give the structure medicinal use and assay of chlorpromazine.

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10. Give the chemical structure common names formulation and therapeutic use.

(a) Frusemide. $(1 + \frac{1}{2} + \frac{1}{2} + \frac{1}{2})$

(b) Chlorpromazine. $(1 + \frac{1}{2} + \frac{1}{2} + \frac{1}{2})$

11. Write about the chemotherapy of Leprosy and give the synthesis of Dapsone.

12. Write the synthesis and Medicinal uses of sulphadiazine.

13. Write the synthesis and assay of Dothiepin.

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[SG 725]

Sub. Code : 4216

FOURTH B.Pharm. DEGREE EXAMINATION.

(New Regulations)

**Paper I — MEDICINAL CHEMISTRY OF SYNTHETIC
DRUGS**

Time : Three hours Maximum : 90 marks

Two and a half hours Sec. A & Sec. B : 60 marks

for Sec. A and Sec. B Section C : 30 marks

Answer Sections A and B in separate answer books.

Answer Section C in the answer sheet provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. Give an account of tranquilisers used as antipsychotic agents covering their classification, mode of action and synthesis of any three members each from a different class.

2. Write the chemical name and synthesis of one H₁-receptor antagonist from each of the following classes :

(a) Aminoalkyl ethers

(b) Ethylene diamines and

(c) Phenothiazine analogues.

Discuss giving examples how structural variation resulted in more effective compounds in any one of these categories.

3. Classify antineoplastic agents giving examples. Outline the mode of action, clinical uses and synthesis of chlorambucil, azathioprine and cyclophosphamide.

4. (a) Classify antihypertensive drugs with examples and give the synthesis of hydralazine and methyldopa. (4 + 2 + 2)

(b) What are the different drugs acting on cardiovascular system? Write a brief note on reserpine and propranolol. (3 + 2 + 2)

SECTION B — (6 × 5 = 30 marks)

Answer any SIX questions.

5. Discuss the influence of stereo isomerism on the biological activity of drugs giving examples.

6. Explain the common structural features of drugs used in epilepsy. Outline the synthesis of phenytoin.

7. Write about the chemotherapy of leprosy and give the synthesis of Dapsone.

8. Illustrate the chemical classification of oral hypoglycaemic agents giving the structures of typical examples. Explain their mode of action.

9. Enumerate giving the structures the drugs used in gout. Outline the synthesis of carbidoopa.

10. List out giving the structures the antipyretic and antiinflammatory drugs belonging to the classes of *p*-amino phenol derivatives and salicylates. Explain the mode of action of salicylates.

11. Classify local anaesthetics and outline the synthesis of xylocaine.

12. Discuss the influence of partition coefficient on biological activity.

13. Write the structure and uses of

- (a) Thiomersal
- (b) Thiopentone
- (c) Mebendazole
- (d) Ethionamide and
- (e) Mebenamic acid.

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[KA 714]

Sub. Code : 4202

THIRD B. Pharm. DEGREE EXAMINATION.

(Revised Regulations)

CHEMISTRY OF SYNTHETIC DRUGS

[RR]

(For the students admitted before 1996-97)

Time : Three hours

Maximum : 90 marks

Two and a half hours
for Section A & B

Section A & B : 60 marks
Section C : 30 marks

Answer Section A & B in separate Answer Books.

Answer Section C in Answer sheet provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. (a) Classify barbiturates on the basis of duration of action. (5)
(b) Outline a method of synthesis, assay and uses of (10)
 - (i) Imipramine hydrochloride
 - (ii) Cyclo barbitone.
2. (a) Define and classify local anaesthetics with example. (5)
(b) Suggest a method of synthesis, assay and uses of (10)
 - (i) Chlorpromazine hydrochloride
 - (ii) Nitrazepam.

3. (a) Give the method of synthesis of two sulpha drugs used for GIT infections. (6)

(b) Discuss the mechanism of action of sulpha drugs as antibacterial. (4)

(c) Outline a method of synthesis, assay and uses of metronidazole. (5)

4. (a) Give atleast five structure of the drugs used to test organ functions. (5)

(b) Outline a synthetic route for two drugs from ethylene diamine as antihistaminics. (5)

(c) Give the synthesis assay and uses of quinacrine hydrochloride. (5)

SECTION B — (6 × 5 = 30 marks)

Answer any SIX questions.

5. Outline a method of synthesis, assay and uses of chloroquine phosphate.
6. Give the synthesis of Isoniazid and Ethionamide.
7. Suggest a method of synthesis assay and uses of Benzhexol hydrochloride.
8. Draw the structure and uses of the following :
 - (a) Diloxanide furoate
 - (b) Thiabendazole
 - (c) Primidone
 - (d) Methohexitone
 - (e) Methylene blue.

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9. Give a method of synthesis and uses of
 - (a) Tolazoline
 - (b) Oxyphenbutazone.
 10. Discuss the chemistry of antileprotic agent and give a synthetic route for dapsone.
 11. Give all the structures of antithyroid drugs and outline a method of synthesis for any one drug.
 12. Suggest a method of synthesis, assay and uses of frusemide.
 13. Sketch the following and mention their uses :
 - (a) Proguanil
 - (b) Guanethidine sulphate
 - (c) Aminacrine
 - (d) Primaquine
 - (e) Procainamide.
-

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[KA 720]

Sub. Code : 4208

THIRD B.Pharm. DEGREE EXAMINATION.

(Re-Revised Regulations)

Paper II — CHEMISTRY OF SYNTHETIC DRUGS
(RRR)

(For Candidates admitted from 1996-97 onwards)

Time : Three hours

Maximum : 90 marks

Two and a half hours

Sec. A & Sec. B : 60 marks

for Sec. A and Sec. B

Section C : 30 marks

Answer Sections A and B in separate answer books.

Answer Section C in the answer sheet provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. Discuss the relationship between biological activity and the following physico-chemical properties of drugs taking suitable example.

- (a) Partition coefficient
- (b) Stereo-isomerism
- (c) Chelation.

2. Classify the sulphanamide based on its action with suitable examples.

Explain how the sulpha drugs act as bacterial agents.

Suggest a method for the synthesis and assay of sulphadimidine.

3. Classify anticonvulsant. Give the synthesis of Phenobarbitone Phenyntoin Ethosuximide.

4. Classify local anaesthetics with one example for each class.

Give the method of synthesis for Procaine and Lignocaine.

SECTION B — (6 × 5 = 30 marks)

Answer any SIX questions.

5. Give the structure synthesis and medicare uses of tolbutamide.

6. Give the structure, medicinal uses and a method of assay of Isoniazid.

7. Give the structure, synthesis and medicinal uses of Nitroazepam.

8. Name the barbiturates used as anaesthetics. Give the structure and synthesis of thiopentone.

9. Name few pyrazine derivatives used as medicine. Give the synthesis and medicinal uses of Diethyl carbamazine.

10. Name the pyrazole derivative used as Anti-inflammatory agents. Give the structure and synthesis of oxyphenbutazone.

11. Name the antihypertensive agents. Give the structure and assay for Hydralazine.

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12. Give the structure, synthesis and medicinal uses of procyclidine.
 13. Give the structure, medicinal uses and assay of Neostigmine.
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[KA 725]

Sub. Code : 4216

FOURTH B.Pharm. DEGREE EXAMINATION.

(New Regulations)

Paper I — MEDICINAL CHEMISTRY OF SYNTHETIC DRUGS

Time : Three hours Maximum : 90 marks

Two and a half hours Sec. A & Sec. B : 60 marks

for Sec. A and Sec. B Section C : 30 marks

Answer Sections A and B in separate answer books.

Answer Section C in the answer sheet provided.

SECTION A — ($2 \times 15 = 30$ marks)

Answer any TWO questions.

1. Enumerate the anti cancerous drugs and outline the synthesis of anti cancer drugs. Outline the synthesis of chlorambucil and methotrexate.
2. Classify Histaminic receptors and describe the biological role of Histamine. Give an account of the classification of H_1 -receptor antagonists and their clinical uses. Describe the synthesis of any two such compounds.
3. What are local anaesthetics? Classify them giving suitable examples. Show the synthetic route of (a) Xylocaine (b) Cyclomethicaine.
4. What are diuretics? What is their mechanism of action? Give a list of official drug which act as diuretics. Give the synthesis of Frusemide.

SECTION B — ($6 \times 5 = 30$ marks)

Answer any SIX questions.

5. Discuss the effect of partition coefficient on the biological activity of drugs citing suitable examples.
6. Explain the mechanism of action of salicylates as anti inflammatory agents.
7. Enumerate and give the structures of drugs used in the treatment of Gout and explain their mechanism of action.
8. Classify anthelmintic drugs giving the structures of typical examples. Outline the synthesis of any two of them.
9. Describe the general synthesis of anti bacterial sulfonamides and explain their mechanism of action.
10. Describe the synthesis of methyl DOPA and show how it acts as an anti hypertensive agent.
11. List the commonly used anti convulsants giving their structures. Point out the portion of the structure common to all of them. Describe the synthesis and uses of phenytoin.
12. Give the structure of the heterocyclic ring present in each of the following drug molecule and indicate their therapeutic use :
 - (a) Guanithidine
 - (b) Isoniazid.
13. Outline the synthesis of Metronidazole and Nikethamide.

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[KB 714]

Sub. Code : 4202

THIRD B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper II — CHEMISTRY OF SYNTHETIC
DRUGS [RR]

Time : Three hours

Maximum : 90 marks

Two and a half hours

Sections A & B : 60 marks

for Sections A and B

Section C : 30 marks

Answer Sections A and B in separate Answer books.

Answer Section C in the answer sheet provided.

SECTION A — ($2 \times 15 = 30$ marks)

Answer any TWO questions.

1. (a) What is Skraup reaction? (2)
(b) Explain the synthesis of primaquine and chloroquine through Skraup reaction. (5 + 5)
(c) Write the principle and reaction involved in the assay of Oxyphenyl butazone? (3)
2. (a) What are barbiturates? Write the general properties of barbiturates. (3)
(b) Suggest synthetic routes and mention therapeutic uses of : (3 × 4 = 12)
 - (i) Phenobarbitone
 - (ii) Thiopentone
 - (iii) Phenytoin sodium.

3. (a) What are sulphonamides? (1)
(b) How are the following drugs synthesised and what are their specific uses? ($4 \times 3\frac{1}{2} = 14$)

- (i) Sulphadimethoxine
- (ii) Phthalylsulphathiazole
- (iii) Chlorthiazide
- (iv) Dapsone.

4. (a) Classify medicinal dyes according to their chemical nature with example. (3)
(b) Write the synthesis and uses of (3 × 4 = 12)

- (i) Methylene blue
- (ii) Indigo carmine
- (iii) Fluorescein.

SECTION B — ($6 \times 5 = 30$ marks)

Answer any SIX questions.

5. Write the synthesis and assay of INH. ($2\frac{1}{2} + 2\frac{1}{2} = 5$)
6. What are hydantoins? Outline the synthesis of nitrofurantoin. Mention its use. (1 + 3 + 1 = 5)
7. (a) Write the chemical structure for any two drugs containing phenothiazine ring. (2)
(b) Show the synthetic route for any one. (3)
8. (a) How is chlordiazepoxide synthesised? (3)
(b) Why is it stored in light resistant container? (2)

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9. (a) Classify synthetic local anaesthetics based on their chemical nature. (2)

(b) Write the synthesis of lignocaine. (3)

10. What are dignanides? Outline the synthesis of any one drug. Mention its use. (1 + 3 + 1 = 5)

11. (a) Write the general structure of methonium compounds. (1)

(b) How does it differ from quaternary ammonium compounds as surface active agents? (1)

(c) Discuss chemical nature, physical properties and uses of benzalkonium chloride. (3)

12. Write the synthesis of two acridine drugs one from each category. Mention their use. ($2\frac{1}{2} + 2\frac{1}{2} = 5$)

13. Write the chemical structure and uses of (1 $\frac{1}{2}$ × 4 = 5)

(a) Nikethamide

(b) Metronidazole

(c) Trimethadione

(d) Frusemide.

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[KB 720]

Sub. Code : 4208

THIRD B.Pharm. DEGREE EXAMINATION.

(Re- Revised Regulations)

Paper I — CHEMISTRY OF SYNTHETIC DRUGS
[RRR]

(Common to IV Year NR-Medicinal Chemistry of Synthetic Drugs)

Time : Three hours **Maximum : 90 marks**

Two and a half hours **Sec. A & Sec. B : 60 marks**

for Sec. A and Sec. B Section C : 30 marks

Answer Sections A and B in separate Answer books.

Answer Section C in the answer sheet provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. (a) Classify the local anaesthetic agents with suitable examples. Explain the general mechanism of action. Give the synthesis of Procaine and Lidocaine.

 $(1\frac{1}{2} + 1\frac{1}{2} + 2 + 2)$

(b) Classify the analgesics with suitable examples. Explain the synthesis of Dextropropoxyphen and Ibuprofen. (2 + 3 + 3)

 $(2 + 3 + 3)$

2. (a) Explain the synthesis of Sulphamethoxazole and Trimethoprim. How Cotrimoxazole tablets are assayed? (3 + 3 + 3)

(3 + 3 + 3)

(b) What are medicinal dyes. Classify with suitable examples. Give the preparation and use of Methylene Blue. (3 + 3)

(3 + 3)

3. (a) What are Antihistamines. Classify with suitable examples. Discuss the structure activity relationship. Write the synthesis of Chlorpheniramine and Cimetidine. (2 + 3 + 2½ + 2½)

$$(2 + 3 + 2\frac{1}{2} + 2\frac{1}{2})$$

(b) What are Adrenergic and Anti adrenergic drugs. Give examples. Give the synthesis and use of Salbutamol. (2 + 3)

(2 + 3)

4. (a) Classify the Antimalarials with suitable examples. Explain the synthesis of Chloroquine and Pyrimethamine. (3 + 3 + 3)

$$(9 + 9 + 9)$$

(b) What are Antiseptics and Disinfectants? Classify with suitable examples. Describe the synthesis and use of Nitrofurazone. $(2\frac{1}{2} + 3\frac{1}{2})$

 $(2\frac{1}{2} + 3\frac{1}{2})$

SECTION B — (6 × 5 = 30 marks)

Answer any SIX questions.

5. What are Analeptics? Give examples. Give the synthesis of an analeptic containing Pyrrolidine nucleus. (2 + 3)

(2 + 3)

6. Discuss the structure activity relationship of Tricyclic Antidepressant compounds. Write the structure and numbering of Imipramine, Amitriptyline and Doxepine. (2 + 3)

(2 + 3)

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7. Classify the general anaesthetics with suitable examples. Describe the assay, storage and labelling conditions of Nitrous oxide. $(1\frac{1}{2} + 3\frac{1}{2})$
8. Name the Anti parkinsonian drugs. Give the synthesis of Levodopa. What is the advantage of the combination of Carbidopa and Levodopa. $(1 + 3 + 1)$
9. Discuss the action and use of cholinergic and Anticholinergic drugs. Write the structure of Carbachol and propantheline. $(3 + 2)$
10. Classify the Diuretics with examples. Give the synthesis of Acetazolamide. $(2 + 3)$
11. What are the different classes of antiarrhythmic drugs? Write the structure of Procainamide and Disopyramide. Give the synthesis of Procainamide. $(1 + 2 + 2)$
12. List out the Antiamoebic drugs. Give the synthesis and use of Metronidazole. $(1\frac{1}{2} + 3\frac{1}{2})$
13. Write the structure and use of $(5 \times 1 = 5)$
- (a) Tolbutamide
 - (b) Dapsone
 - (c) Isoniazid
 - (d) Nifedipine
 - (e) Furosemide.
-

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[KC 714]

Sub. Code : 4202

THIRD B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper II — CHEMISTRY OF SYNTHETIC DRUGS

Time : Three hours

Maximum : 90 marks

Two and a half hours
for Sec. A and Sec. B

Sec. A and Sec. B : 60 marks
Section C : 30 marks

Answer Sections A and B in Separate Answer Books.

Answer Section C in the Answer Sheet provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. (a) What are sulphanamides?
(b) Classify them with examples and explain in brief the mode of action
(c) Give the synthesis and uses of sulphadoxazole II sulphadiazine.
2. (a) Classify diuretics with example (structure) for each cases.
(b) Explain the mechanism of action of Mercurials
(c) Give the synthesis of mersalyl and chlorthiazide.

3. (a) Explain the rational of multidrug therapy in the treatment of Leprosy

(b) Classify antitubercular drugs with examples.

(c) Give the synthesis, mechanism of action and uses of (1) Ethionamide II I.N.H.

4. (a) What are anti allergic agents?

(b) Discuss the structural features and chemistry of ethylenediamine type of antihistaminic drugs.

(c) What are local anathetics? Classify them with examples.

SECTION B — (6 × 5 = 30 marks)

Answer any SIX questions.

5. Give the method of synthesis and medicinal uses of Nitrofurantion.
6. Write a note on the relationship between biological action and Hydrogen bonding.
7. Write a note on anticholesteramic agents.
8. List the names of anthelmintic drugs in clinical use and write the structures of four such drugs.
9. Enumerate the names and structures of alkylating agents used in cancer chemotherapy and comment on their mode of action.

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10. Give the method of preparation and medicinal uses of 1 imidazole derivative used as nasal decongestant.
 11. Outline the method for the synthesis of Antazoline and chlorcyclizine.
 12. Explain the principle involved and procedure adopted in the assay on Nikethamide.
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[KC 720]

Sub. Code : 4208

THIRD B.Pharm. DEGREE EXAMINATION.

(Re-Revised Regulations)

Paper I — CHEMISTRY OF SYNTHETIC DRUGS

(RRR)

(Common to IV Year NR – Medicinal Chemistry of
Synthetic Drugs)

Time : Three hours
Two and a half hours
for Sec. A & Sec. B

Maximum : 90 marks
Sec. A & Sec. B : 60 marks
Section C : 30 marks

Answer Sections A and B in separate Answer books.

Answer Section C in the answer sheet provided.

Answer any TWO questions from Section A.

Answer any SIX questions from Section B.

SECTION A — (2 × 15 = 30 marks)

1. Correlate the following physico chemical properties of drugs with their Biological action :

- (a) Partition co-efficient
- (b) Oxidation reduction potential
- (c) Surface activity.

2. (a) What are antihistaminics? Explain the types of Histamine receptor antagonist with examples.

(b) Write the synthesis and assay of any three of them. (3 + 12)

3. Write the synthesis, assay and use of the following :

- (a) Hydrogen peroxide
- (b) Crystal violet
- (c) Di iodohydroxy quinoline. (3 × 5 = 15)

4. (a) Classify hypnotics and sedatives with examples.

- (b) Explain the synthesis and use of
 - (i) Diazepam
 - (ii) Phenytoin
 - (iii) Paracetamol.

(3 + 12)

SECTION B — (6 × 5 = 30 marks)

5. Explain, briefly, isosterism with example.

6. Explain the difference in biological action of geometrical isomers with example.

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7. Write the structure and use of the following :
- (a) Clomipramine
 - (b) Bromocriptine
 - (c) Diltiazem
 - (d) Colestipol
 - (e) Famotidine.
8. Write the synthesis, assay and uses of pethidine HCl.
9. What are diuretics? Write the structure of any four of them.
10. Write the synthesis, assay and use of thiabendazole.
11. Name the antithyroid drugs and explain the synthesis of any one of them.
12. Explain the synthesis, assay and use of Neostigmine.
13. Give an account of Quaternary ammonium compounds used as antiseptic.