

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

[BPHARM 0321]

MARCH 2021

Sub. Code: 2059

(SEPTEMBER 2020 EXAM SESSION)

B. PHARMACY DEGREE EXAMINATION

PCI Regulation SEMESTER – VI

PAPER I – MEDICINAL CHEMISTRY III

Q.P. Code : 562059

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions.

(2 x 10 = 20)

1. Define Tuberculosis and Anti- tubercular agents. Write about synthesis, mechanism of action of Isoniazid and para amino salicylic acid.
2. Write about Solid phase synthesis and applications of combinatorial chemistry.
3. Write the nomenclature, classification and Structure activity relationship of Tetracycline.

II. Write notes on: Answer any SEVEN questions.

(7 x 5 = 35)

1. Classification of anti – viral agents.
2. Write a short note on Beta lactamase inhibitors.
3. Discuss about various approaches used in drug design.
4. Write about synthesis of Trimethoprim and Dapsone.
5. Write a note on Macrolide antibiotics.
6. Basic concepts of prodrug design.
7. Write about synthesis of Miconazole and Tolnaftate.
8. Write the structures for the following: a). Metronidazole b). Chloroquine c). Cotrimoxazole d). Chlorobutanol e). Hexamine
9. Write a short note on Taft's steric parameter.

III. Short answers on: Answer ALL questions.

(10 x 2 = 20)

1. Define partition coefficient.
2. Molecular docking.
3. Write the structure and use of Methanamine.
4. Write the structure of Amantadine Hcl.
5. Define Anthelmintics.
6. Pharmacophore modeling.
7. Antifungal agents.
8. Combinatorial chemistry.
9. Structure and uses of Quinine sulphate.
10. Mechanism of action of Erythromycin.

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

[BPHARM 0921]

**SEPTEMBER 2021
(SEPTEMBER 2020 EXAM SESSION)**

Sub. Code: 2059

**B. PHARMACY DEGREE EXAMINATION
PCI Regulation 2017 - SEMESTER - VI
PAPER I – MEDICINAL CHEMISTRY III
*Q.P. Code : 562059***

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Discuss briefly about chemistry, classification and SAR of Sulfonamides.
2. Write about the physico-chemical parameters used in Quantitative Structure Activity Relationship (QSAR) studies.
3. Write about the nomenclature, classification and degradation of penicillin.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Write a note on pharmacophore modeling.
2. Discuss about Structure activity relationship of Quinolones.
3. Write about synthesis and uses of Chloramphenicol.
4. Define and classify drugs used for Urinary tract infection (UTI).
5. Write the structures for the following :
a). Ketoconazole b). Acyclovir c). Pyrazinamide d). Thiabendazole
e). Sulfamethoxazole.
6. Write a note on Aminoglycosides.
7. Write the synthesis, mechanism of action and uses of Sulfacetamide.
8. Write a note on Anti – malarial drugs.
9. Write the application of prodrug.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Write the synthesis of nitrofurantoin.
2. What is molecular docking?
3. Write a note on Monobactams.
4. What are beta lactamase inhibitors?
5. Write the structure and uses of Cycloserine.
6. Write the uses of Nalidixic acid and Clotrimazole.
7. Write the synthesis of Diethyl carbamazepine citrate.
8. Define partition coefficient.
9. Write the structure and uses of para amino salicylic acid.
10. Define anthelmintics with examples.

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

[BPHARM 0122]

**JANUARY 2022
(MARCH 2021 EXAM SESSION)**

Sub. Code: 2059

B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)

PCI Regulation 2017 – SEMESTER VI

PAPER I – MEDICINAL CHEMISTRY III

Q.P. Code : 562059

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Define Anti – malarial drugs, write about its classification and synthesis of Chloroquine and Pamaquine.
2. Define combinatorial chemistry and write about solution phase synthesis.
3. a). Define Antibiotics. Write about the classification of anti – biotics.
b). Write about the synthesis and uses of Sulfacetamide and Sulfamethoxazole.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Classify Antiprotozoal agents.
2. Write about synthesis and uses of Ciprofloxacin.
3. Structure activity relationship of Quinolines.
4. Write about applications of prodrug design.
5. Write the structure, mechanism of action and uses of Cephalosporin.
6. Write short notes on biguanides.
7. Molecular docking techniques.
8. Write about the synthesis and uses of Nitrofurantoin.
9. Write about Hansch analysis.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Mechanism of Penicillin.
2. Define Pharmacophore.
3. Give the importance of QSAR studies.
4. What is Cotrimoxazole.
5. Define Molecular modeling.
6. Write the mechanism of action of Albendazole.
7. Write the structure and use of Dapsone.
8. Anti – Protozoal agents.
9. Write a note on Sulfones.
10. Structure of Metronidazole.

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

[BPHARM 0522]

MAY 2022

Sub. Code: 2059

(SEPTEMBER 2021 EXAM SESSION)

B. PHARMACY DEGREE EXAMINATION

PCI Regulation SEMESTER - VI

PAPER I – MEDICINAL CHEMISTRY III

Q.P. Code : 562059

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions.

(2 x 10 = 20)

1. Discuss the chemistry, mechanism of action, SAR and synthesis of Chloramphenicol.
2. Classify sulphonamides. Briefly discuss the mechanism of action and SAR of sulphonamides. Enumerate the synthesis of sulfacetamide.
3. Write a brief account on lipophilic parameters and electronic descriptors involved in QSAR.

II. Write notes on: Answer any SEVEN questions.

(7 x 5 = 35)

1. Classify quinolone urinary tract anti-infectives and write the structure and MOA of any two fluoro quinolones.
2. Describe briefly on various approaches of prodrug design.
3. Give a note on Azole antifungals.
4. Describe the structure and mechanism of action of Metronidazole and Tinidazole.
5. Write a short note on β -lactamase inhibitors.
6. Write the structure and uses of Mebendazole and Diethylcarbamate citrate
7. Write the mechanism of action and SAR of aminoglycosides.
8. Synthesis of pamaquine.
9. Write the classification and SAR of penicillin antibiotics.

III. Short answers on: Answer ALL questions.

(10 x 2 = 20)

1. MOA of tetracyclines.
2. Structure and uses of Rifampicin.
3. Monobactam antibiotics.
4. Structure of any two cephalosporins.
5. Classify antiprotozoal agents.
6. Nalidixic acid.
7. Write benzimidazole anthelmintics.
8. Any two β -lactamase resistant penicillins.
9. HIV Protease inhibitors.
10. Define Combinatorial Chemistry along with any two applications?

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[BPHARM 1022]

**OCTOBER 2022
(MARCH 2022 EXAM SESSION)**

Sub. Code: 2059

B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)

PCI Regulation 2017 – SEMESTER VI

PAPER I – MEDICINAL CHEMISTRY III

Q.P. Code : 562059

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Explain combinatorial chemistry in detail.
2. Briefly discuss the mechanism of action and SAR of azole antifungals.
3. Define and classify urinary-tract Anti-infective agents with examples. Explain the chemistry, SAR, mechanism of action of Quinolone anti-bacterial agents.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Explain the mechanism of action of Metronidazole.
2. Describe the mechanism of action of (a) Polyene antifungals (b) Allylamine antifungals.
3. Write the mechanism of action and structure of any one class of antitubercular agents.
4. Discuss the mechanism of action, SAR and synthesis of chloramphenicol.
5. Describe various electronic parameters involved in QSAR study.
6. Write notes on synergism and mechanism of action of sulphonamide.
7. Brief out the chemistry of cephalosporins.
8. Outline the synthesis of Chloroquine.
9. Write the structure of a) trimethoprim b) pyrimethamine.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Write the structure and use of mebendazole.
2. Give an account on bigaunaide antimalarials.
3. Write the structure of sulfonamides used for burn therapy.
4. Give an account on saquinavir.
5. Write a note on the applications of combinatorial library synthesis.
6. Write a note on β - Lactamase inhibitors.
7. Define amoebiasis and give an account on the causative agents.
8. Write the synthesis of amantadine.
9. Brief out on the types of prodrugs.
10. Classify macrolides with examples.

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

[B.PHARM 0323]

**MARCH 2023
(SEPTEMBER 2022 EXAM SESSION)**

Sub. Code: 2059

**B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)
PCI Regulation 2017 – SEMESTER VI
PAPER I – MEDICINAL CHEMISTRY III**

Q.P. Code: 562059

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Discuss briefly SAR, chemistry, degradation and mechanism action of Tetracyclines.
2. Define and classify Anthelmintics. Give synthesis of Mebendazole.
3. Explain the chemistry, mechanism of action and enumerate the synthesis of any one antiviral drug.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Write the synthesis and mechanism of action of any one Antiprotozoal agent.
2. Discuss briefly the SAR of azole antifungals.
3. Define pharmacophore and discuss briefly on various modeling techniques.
4. Write a note on solid phase synthesis.
5. Explain the chemistry and structure of a) PAS b) Ethambutol.
6. Give an account on crystalluria and depict the strategies utilized to prevent it.
7. Write a note on semisynthetic penicillins and also brief out the advantages of semisynthetic penicillins over natural penicillins.
8. Enumerate the synthesis of metronidazole.
9. Explain the life cycle of malarial parasite.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Write the structure and use of nalidixic acid.
2. Give an account on benzimidazole anthelmintics.
3. Write a note on third generation quinolones.
4. Write the structure and use of DEC.
5. Brief on the mechanism of action of naftifine.
6. Give an account on the applications of docking studies.
7. Write a short note on Folate reductase inhibitors.
8. Define malaria and write a note on the causative agents.
9. Write the synthesis of hexamine.
10. Give an account on prodrug design.

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

[B.PHARM 0823]

**AUGUST 2023
(MARCH 2023 EXAM SESSION)**

Sub. Code: 2059

**B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)
PCI Regulation 2017 – SEMESTER VI
PAPER I – MEDICINAL CHEMISTRY III**

Q.P. Code: 562059

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Classify antibiotics. Explain in detail about the chemistry and SAR of cephalosporins.
2. Write down the Synthesis and Mechanism of Chloroquine. Add a note on SAR of 4-Amino quinolines.
3. Write the classification of Anti-viral drugs with suitable examples. Explain the synthesis and mechanism of Acyclovir.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Write a note on Combinatorial Chemistry.
2. Write the structure and uses of clotrimazole and Tolnaftate.
3. Give the structure and uses of:
 - a) Tetracycline
 - b) Erythromycin
4. Write short notes on anthelmintics.
5. Write a note on partition coefficient and Hammett's electronic parameter.
6. Synthesis of Metronidazole.
7. Anti tubercular antibiotics.
8. Write the structure, Mechanism of action and uses of sulphacetamide sodium and sulphasalazine.
9. Write the chemistry, Mechanism of action and uses of Amphotericin B.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Structure and mode of action of Ethionamide.
2. Mechanism of action of Sulphonamides.
3. Mechanism of ciprofloxacin.
4. Write the name of any two folate reductase inhibitors.
5. Write about Pharmacophore modeling.
6. Write mechanism of β lactam antibiotics.
7. Write structure and uses of Griseofulvin and Fluconazole.
8. Artemisinin antimalarials.
9. Sulphapyridine.
10. MOA of Chloramphenicol.

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

[B.PHARM 1223]

**DECEMBER 2023
(SEPTEMBER 2023 EXAM SESSION)**

Sub. Code: 2059

**B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)
PCI Regulation 2017 – SEMESTER VI
PAPER I – MEDICINAL CHEMISTRY III**

Q.P. Code: 562059

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Write the structure, mechanism and SAR of Tetracyclines.
2. Define and classify anti-tubercular agents. Give the synthesis and mechanism of action of following drugs.
 - a. Isoniazid.
 - b. Para amino salicylic acid.
3. Explain various approaches of drug design.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Describe the structure and mechanism of action of Polyene antifungal antibiotics.
2. Write the structure and uses of Streptomycin and Kanamycin.
3. Write the structure, mechanism of action and uses of Quinacrine and Pamaquine.
4. Synthesis of Mebendazole.
5. Classify and give the structure and uses of Reverse Transcriptase (RT) inhibitors.
6. Write a short note on anti protozoals.
7. Synthesis of Sulphamethoxazole.
8. Structure and uses of Azithromycin and Clindamycin.
9. Write short notes on SAR of Quinolone antibacterials.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Trimethoprim.
2. Structure and uses of dapsone.
3. Cycloserine.
4. Structure and uses of Norfloxacin.
5. Structure and uses of Naftifine HCl.
6. Primaquine.
7. Structure and uses of didanosine.
8. MOA of penicillin.
9. Define prodrug with example.
10. Write the structure of ciprofloxacin and nitrofurantoin.

B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)
PCI Regulation 2017 – SEMESTER VI
PAPER I – MEDICINAL CHEMISTRY III

Q.P. Code: 562059

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Antifungal agents. Classify with suitable examples. Write the mechanism of action, uses and synthesis of Miconazole and Tolnaftate.
2. Classify antibiotics. Explain in detail about the chemistry and SAR of Cephalosporins.
3. Define combinatorial chemistry, write about solid phase synthesis and write the applications of combinatorial chemistry.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Write the SAR of Antimalarial agents.
2. Write the mechanism of action and SAR of Quinolones.
3. Write the classification and SAR of penicillin antibiotics.
4. Write the structure, synthesis and uses of chloramphenicol.
5. Write the structure, synthesis and uses of Acyclovir.
6. Write short notes on Prodrug.
7. Classify Anti-protozoal agents and write the synthesis of Metronidazole.
8. Classify Anti-infective agents and write the synthesis of Nitrofurantoin.
9. Write a short note on Taft's steric parameter.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Write the structure of Pyrimethamine and Atovoquone.
2. Define docking.
3. Write the structure and uses of Chlortetracycline.
4. Write the structure and uses of Clindamycin.
5. Write the structure and uses Rifampicin.
6. Write the structure and uses of Sulphadiazine.
7. Write the structure and uses of Capreomycin sulphate.
8. Mechanism action of Clarithromycin.
9. Write the structure and uses of Methanamine.
10. Write the structure of Ribavirin and Saquinavir.

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

[B.PHARM 1024]

**OCTOBER 2024
(SEPTEMBER 2024 EXAM SESSION)**

Sub. Code: 2059

B. PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)

PCI Regulation 2017 – SEMESTER VI

PAPER I – MEDICINAL CHEMISTRY III

Q.P. Code: 562059

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions.

(2 x 10 = 20)

1. Write the structure, chemistry, mechanism of action, SAR and synthesis of Chloramphenicol.
2. Anti-tubercular agents. Classify with suitable examples. Write the mechanism of action, uses and synthesis of Isoniazid and Para-aminosalicylic acid.
3. Write a brief account of Hammett's electronic parameter and Hansch analysis.

II. Write notes on: Answer any SEVEN questions.

(7 x 5 = 35)

1. Write notes on Target based approaches.
2. Write notes on solid phase synthesis.
3. Write the synthesis of Sulfacetamide and Sulfamethoxazole.
4. Write a short note on β Lactamase Inhibitors.
5. Write the structure, synthesis and uses of Chloroquine.
6. Write the classification and SAR of penicillin antibiotics.
7. Write the structure, synthesis and uses of Miconazole.
8. Write the structure, synthesis and uses of Metronidazole.
9. Write a short note on Macrolide antibiotics.

III. Short answers on: Answer ALL questions.

(10 x 2 = 20)

1. Write the structure of Amodiaquine and Pamaquine.
2. Write the structure and uses of doxycycline.
3. Write the classification of sulphonamides.
4. Write the structure and uses of Diethylcarbamazine citrate.
5. Write the structure of Amphotericin-B and Nystatin.
6. Write the structure and uses of Amantadine hydrochloride.
7. Applications of prodrugs.
8. Write the structure and uses of Ketoconazole.
9. Aminoglycosides antibiotics.
10. Combinatorial chemistry.

B. PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)
PCI Regulation 2017 – SEMESTER VI
PAPER I – MEDICINAL CHEMISTRY III

Q.P. Code: 562059

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Antimalarial agents. Classify with suitable examples. Write the mechanism of action, uses and synthesis of Chloroquine and pamaquine.
2. Classify antibiotics. Explain in detail about the chemistry and SAR of Penicillin.
3. Define combinatorial chemistry, write about solution phase synthesis and write the applications of combinatorial chemistry.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Write notes on the SAR of Chloramphenicol.
2. Write short notes on Biguanides and Dihydro triazines.
3. Write short notes on molecular docking techniques.
4. Write notes on the Partition coefficient.
5. Write the synthesis and uses of Metronidazole.
6. Write short notes on Beta-lactamase inhibitors.
7. Write short notes on macrolide antibiotics.
8. Write the application of prodrugs.
9. Write the structure, synthesis and uses of Isoniazid.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Write the structure of Ethionamide and Ethambutol.
2. Define pharmacophore.
3. Write the structure and uses of Oxytetracycline.
4. Write the structure and uses of Nalidixic acid.
5. Write the structure of any two Cephalosporins.
6. Cotrimoxazole.
7. Write the structure and uses of Dapsone.
8. Write the structure and uses Rifampicin.
9. Write the structure and uses Griseofulvin.
10. Classify antiprotozoal agents.
