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

[LM 946] MAY 2018 **Sub. Code: 2946**

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

Q.P. Code : 262946

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

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

1. a) What are the groups commonly used to protect amino and carboxylic acid groups during peptide synthesis.
   b) Explain N-terminal residue analysis and C-terminal residue analysis.
   c) Explain solid phase peptide synthesis with an example.

2. What are sonochemical reactions? Explain the phenomenon of cavitation. Discuss the different classes of sonochemical reactions.

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

1. Explain stereospecificity of electrocyclic reactions on the bases of Woodward-Hoftmann rule and orbital symmetry.
2. Write a short note on continuous flow reactions.
3. What are the different methods used for resolving racemic mixtures?
4. Write a short note on Chiral pool synthesis.
5. Give the applications of Wilkinson catalyst and Ziegler Natta catalyst.
6. Write a short note on Heterogeneous catalysis.
7. Write a short note on the E and Z notation used for Geometric isomers.

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

[LN 946] NOVEMBER 2018 **Sub. Code: 2946**

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

Q.P. Code : 262946

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

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

1. Define pericyclic reactions. What are the different types of pericyclic reactions? Explain in detail with suitable examples.

2. Discuss in detail microwave assisted organic synthesis with suitable examples. What are the advantages over conventional synthesis and what are the limitations?

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

1. Write a short note on phase transfer catalysis.
2. Give five examples of bio-catalysis in organic reactions.
3. Outline the strategies for solution phase peptide synthesis with an example.
4. Explain the Cahn, Ingold, Prelog sequence rule.
5. Discuss the different levels of protein structure.
6. Explain the role of transition-metal and organo catalysis in organic synthesis.
7. Write a short note on Asymmetric synthesis.

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

[LO 946] MAY 2019 **Sub. Code: 2946**

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

Q.P. Code : 262946

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

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

1. a) Write briefly about photochemical reactions.
   b) Explain photo oxidation and photo addition with suitable example.

2. a) What are microwave assisted reactions? Write merits and demerits.
   b) Explain mechanism & superheating effects of microwave.

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

1. Explain coupling reactions in peptide synthesis.
2. Discuss the types of sonochemical reactions.
3. What are sigmatrophic rearrangement reaction?
4. Explain theory and applications of phase transfer catalysis.
5. Write a short note on E and Z notation.
6. Give the role of enzymes in organic synthesis.
7. What are the different methods of resolution of racemic mixture?

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

[LP 946] NOVEMBER 2019 **Sub. Code: 2946**

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

Q.P. Code : 262946

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

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

1. Define Sonochemical reactions. Discuss the different classes of Sonochemical reactions.

2. a) What are the groups commonly used to protect groups during peptide synthesis with examples.
   b) Explain residue analysis.
   c) Explain solution phase peptide synthesis with an example.

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

1. Chiral pool synthesis with an example.
2. Homogenous catalysis with examples.
3. Explain Wilkinson catalysis and Ziegler – Natta catalysts.
4. Solid phase peptide synthesis with an example.
5. Explain C-terminal residue analysis.
6. Write a note on Fischer's D and L notation.
7. Photo addition reactions.

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

[LQ 0121] JANUARY 2021 Sub. Code: 2946

(APRIL 2020 EXAM SESSION)

M.PHARMACY DEGREE EXAMINATION

SEMESTER-II (PCI New regulations 2016)

PHARMACEUTICAL CHEMISTRY – MPC

PAPER II – ADVANCED ORGANIC CHEMISTRY – II

Q.P. Code : 262946

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

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

1. a) Explain solid phase peptide synthesis and coupling synthesis with example.
   b) Discuss N-terminal residue analysis and C-terminal residue analysis.

2. Explain the principles and applications of green chemistry.

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

1. Write a note on chiral pool synthesis.
2. Define catalysis. Write the types and advantages of catalysis.
3. Explain the basic principle of photochemical reactions.
4. Write short note on continuous flow reactions.
5. Explain C-terminal residue analysis.
6. Write a note on Fischer's D and L notation.
7. Give the types and applications of sonochemical reactions.

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

[MPHARM 0921] SEPTEMBER 2021 Sub. Code: 2946
(OCTOBER 2020 EXAM SESSION)

M.PHARMACY DEGREE EXAMINATION
SEMESTER-II (PCI New regulations 2016)
PHARMACEUTICAL CHEMISTRY - MPC
PAPER II – ADVANCED ORGANIC CHEMISTRY – II
Q.P. Code : 262946

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

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

1. Give a detailed account on Microwave technology in process optimization and applications.

2. (a) Explain in detail sigmatropic rearrangement reactions.
   (b) Discuss the theory and applications of Phase transfer catalysts.

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

1. Explain coupling reactions in peptide synthesis.
2. Write notes on the following
   (a) Diastereoisomers
   (b) Enantiomers
   (c) Stereoselective synthesis.
3. Discuss in detail side reactions in peptide synthesis.
4. What is cis-trans isomerism? Explain E-Z nomenclature with suitable examples.
5. Describe the importance of solid supports and linkers in peptide synthesis.
6. Explain physical process in photochemical reactions.
7. Describe the applications of transition metals in organic synthesis.

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

[M.PHARM 0922] SEPTEMBER 2022 Sub. Code: 2946
(APRIL 2022 EXAM SESSION)

M.PHARMACY DEGREE EXAMINATION
SEMESTER - II (PCI New regulations 2016)
PHARMACEUTICAL CHEMISTRY - MPC
PAPER II – ADVANCED ORGANIC CHEMISTRY – II

Q.P. Code : 262946

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

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

1. Define recemic modification. Explain the methods of resolution of recemic modification.

2. a) Explain the basic principles of photo chemical reaction.
   b) Explain photo addition and photo fragmentation reactions.

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

1. Sigmatrophic rearrangement reaction and its application.
2. Phase transfer catalysis.
3. Synthetic applications of heterogeneous catalyst.
4. Discuss the working principle and synthetic applications of continuous flow reactors.
5. E and Z notation.
6. Super heating effect of microwave.
7. Explain Electrocyclic reactions.

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

[M.PHARM 0423] APRIL 2023 Sub. Code: 2946
(OCTOBER 2022 EXAM SESSION)

M.PHARMACY DEGREE EXAMINATION
SEMESTER - II (PCI New regulations 2016)
PHARMACEUTICAL CHEMISTRY - MPC
PAPER II – ADVANCED ORGANIC CHEMISTRY – II

Q.P. Code: 262946

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

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

1. a) Explain the continuous flow reactor working principle, advantage and its application.
   b) Write notes on Site specific chemical modification of peptides.
2. Explain the types of pericyclic reactions with suitable examples.

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

1. TBOC and FMOC protocols.
2. Optimization and application of microwave assisted synthesis.
3. Write a brief note on biocatalysis.
4. Ziegler-Natta catalyst.
5. Meso and pseudo asymmetric compounds.
6. Explain DL system of configuration.
7. Explain the side reaction in peptide synthesis.

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

[M.PHARM 0823] AUGUST 2023 Sub. Code: 2946
(APRIL 2023 EXAM SESSION)

M.PHARMACY DEGREE EXAMINATION
SEMESTER - II (PCI New Regulations 2016)
PHARMACEUTICAL CHEMISTRY - MPC
PAPER II – ADVANCED ORGANIC CHEMISTRY – II

Q.P. Code: 262946

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

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

1. Illustrate the mechanism involved in pericyclic reactions and their applications. Discuss the various types of such reactions.

2. Illustrate the principles involved in coupling reactions in peptide synthesis. Discuss solid phase peptide synthesis.

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

1. Applications of Wilkinson catalyst and Ziegler Natta catalyst.
2. Explain the phenomenon of cavitation.
3. Explain Woodward Hoffmann rule and orbital symmetry based on stereo specificity of electrocyclic reactions.
4. Give the synthesis of Chloroquine.
5. Groups commonly used to protect carboxylic acid groups during peptide synthesis.
6. Discuss with examples Retrosynthesis.
7. Asymmetric synthesis using chiral pool with examples.

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

[M.PHARM 1223] DECEMBER 2023 Sub. Code: 2946
(OCTOBER 2023 EXAM SESSION)

M.PHARMACY DEGREE EXAMINATION
SEMESTER - II (PCI New Regulations 2016)
PHARMACEUTICAL CHEMISTRY - MPC
PAPER II – ADVANCED ORGANIC CHEMISTRY – II

Q.P. Code: 262946

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

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

1. a) Explain principle, effect of solvents in microwave assisted synthesis, mechanism and merits and demerits of its use.
   b) Write notes on Sigmatropic rearrangement reaction.

2. a) Explain the coupling reaction in peptide synthesis.
   b) Write notes on enantiopure separation and stereo selective synthesis.

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

1. Low and high HF cleavage protocols.
2. Photo oxidation and photo fragmentation reactions.
3. Synthetic application of transition metals and organo catalysts.
4. Define asymmetric synthesis and explain the types of asymmetric synthesis.
5. Liquid -liquid and liquid – solid reaction and its application.
6. Side reaction in peptide synthesis.
7. Phase transfer catalysis.

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

[M.PHARM 1124] **NOVEMBER 2024** **Sub. Code: 2946**

M.PHARMACY DEGREE EXAMINATION
SEMESTER - II (PCI New Regulations 2016)
PHARMACEUTICAL CHEMISTRY - MPC
PAPER II – ADVANCED ORGANIC CHEMISTRY – II

Q.P. Code: 262946

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

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

1. a) Discuss the Biocatalysis in Organic synthesis.
   b) Write the theory and applications of phase transfer catalysis.

2. Briefly discuss about different methods of asymmetric synthesis with examples.

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

1. Homogenous catalysis.
2. Sigmatrophic rearrangement reactions.
3. Photo fragmentation.
4. Continuous flow reactors.
5. Various solid supports and linkers in solid phase peptide synthesis.
6. Meso compounds.
7. Types of sonochemical reactions.

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

[M.PHARM 0425] **APRIL 2025** **Sub. Code: 2946**

M.PHARMACY DEGREE EXAMINATION
SEMESTER - II (PCI New Regulations 2016)
PHARMACEUTICAL CHEMISTRY - MPC
PAPER II – ADVANCED ORGANIC CHEMISTRY – II

Q.P. Code: 262946

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

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

1. a) Explain N-terminal residue analysis and C-terminal residue analysis.
   b) Explain solid phase peptide synthesis with an example.

2. a) Explain Photo-oxidation and Photo-addition with suitable examples.
   b) Explain ultrasound assisted reactions including their synthetic applications.

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

1. Discuss about segment and sequential strategies for solution phase peptide synthesis.
2. Discuss the different methods used for resolving racemic mixtures.
3. Chiral pool synthesis.
4. Discuss about transition – Metal and Organo – catalysis.
5. Write about the meso compounds and pseudo assaymetric centres.
6. Pericyclic reactions with examples.
7. Effects of solvents in microwave assisted synthesis.

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

[M.PHARM 1025] **OCTOBER 2025** **Sub. Code: 2946**

M.PHARMACY DEGREE EXAMINATION
SEMESTER - II (PCI New Regulations 2016)
PHARMACEUTICAL CHEMISTRY - MPC
PAPER II – ADVANCED ORGANIC CHEMISTRY – II

Q.P. Code: 262946

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

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

1. a) What are the groups commonly used to protect amino and carboxylic acid groups during peptide synthesis.
   b) Explain solid phase peptide synthesis with an example.

2. What are sonochemical reactions? Discuss the different classes of sonochemical reactions.

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

1. Explain sigma trophic rearrangement reaction and its applications.
2. Wilkinson Catalysts.
3. Write the methods of asymmetric synthesis using chiral pool.
4. Summarize the synthetic applications of homogeneous catalysts.
5. Write a brief note on Biocatalysis.
6. Explain resolution of racemate by formation of diastereomers.
7. Explain the basic principles of photo chemical reaction.

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