

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-Hofmann 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**  
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*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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**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 sigmatropic 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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[LP 946]

NOVEMBER 2019

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**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  
(OCTOBER 2020 EXAM SESSION)

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. 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  
(APRIL 2022 EXAM SESSION)**

**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. Define racemic modification. Explain the methods of resolution of racemic 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. Sigmatropic 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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[M.PHARM 0423]

APRIL 2023  
(OCTOBER 2022 EXAM SESSION)

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 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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