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**B PHARM
(SEM-III) THEORY EXAMINATION 2018-19
PHARMACEUTICAL ORGANIC CHEMISTRY –II**

Time: 3 Hours**Total Marks: 75****Note: 1.** Attempt all Sections.**SECTION A**

- 1. Attempt all questions in brief. 10 x 2 = 20**
- Write a short note on resonance structure of benzene.
 - Give the structure and uses of Saccharin.
 - What are phenols? Give physical properties of it.
 - Give resonance structure and uses of Resorcinol.
 - What is the difference between fats and oils?
 - Define Iodine number (Iodine value).
 - Define acetyl value. Give its signification.
 - What are the uses of triphenylmethane?
 - Give physical and chemical properties of naphthalene.
 - Define cycloalkanes.

SECTION B

- 2. Attempt any two parts of the following: 2 x 10 = 20**
- Explain aromatic electrophilic substitution reactions in Benzene with respect to halogenation with mechanism.
 - Give structures, synthesis, reactions and uses of Anthracene derivatives.
 - Explain Baeyer strain theory of stability of Cycloalkanes and give its limitations.

SECTION C

- 3. Attempt any five parts of the following: 7 x 5 = 35**
- Give the structure and uses of DDT, BHC and Chloramine.
 - Define aromatic amines and give resonance structure of aniline. Explain basicity of aromatic amines and effect of substituent.
 - Explain the principle involved in determination of saponification value of a fat/oil.
 - Why phenols are acidic in nature? Explain effect of substituents on acidity of phenols.
 - What is principle and procedure involved in estimation of acid value of fat/oil?
 - Give structure, synthesis and importance of diphenylmethane.
 - Explain Sache-Mohr theory of stability of cycloalkanes. Give reactions of cyclopropane and cyclobutane.

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B. PHARM
(SEM III) THEORY EXAMINATION 2019-20
PHARMACEUTICAL ORGANIC CHEMISTRY-II

Time: 3 Hours**Total Marks: 75****Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A****1. Attempt *all* questions in brief.****10 x 2 = 20**

- a. Give structure and uses of DDT.
- b. Give molecular orbital picture of benzene.
- c. Why phenol is acidic in nature?
- d. What is Friedal craft acylation? Explain with suitable reaction.
- e. Give structure and uses of Naphthols.
- f. Explain acid value.
- g. Give Hawarth synthesis of phenanthrene.
- h. Give stability order of cycloalkanes.
- i. Draw any four aromatic structures.
- j. Give structure and uses of diphenylmethane.

SECTION B**2. Attempt any *two* parts of the following:****2 x 10 = 20**

- a. Give structure, preparation and properties of phenol.
- b. Give analytical, synthetic and other evidences in derivation of structure of benzene.
- c. Write a note on theory of strainless ring.

SECTION C**3. Attempt any *five* parts of the following:****5 x 7 = 35**

- a. Give Huckel's theory with suitable examples.
- b. Give structure, preparation and properties of benzoic acid.
- c. Give effect of substituent on orientation of monosubstituted benzene compounds towards electrophilic substitution reaction.
- d. Explain saponification and iodine number.
- e. Give reactions of fat and oils.
- f. Give Baeyer's strain theory and its limitation.
- g. Give structure, preparation and properties of naphthalene.



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B PHARM
(SEM-III) THEORY EXAMINATION 2020-21
PHARMACEUTICAL ORGANIC CHEMISTRY II

Time: 3 Hours**Total Marks: 75****Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A****1. Attempt all questions in brief.****10 x 2 = 20**

a.	Define aromaticity.
b.	Why phenol is acidic?
c.	Why <i>p</i> -nitroaniline is less basic than aniline?
d.	Write the definition of RM value.
e.	Discuss the difference between drying and nondrying oil with example.
f.	What do you understand by angle strain?
g.	Write the different conformations of ethane.
h.	Illustrate the principle of saponification value.
i.	Predict the structure and medicinal uses of DDT and Naphthalene.
j.	What is banana bonding.

SECTION B**2. Attempt any two parts of the following:****2 x 10 = 20**

a.	Explain the methods of preparations and chemical reactions of Phenol.
b.	Discuss in detail about the methods of preparations chemical reactions of naphthalene.
c.	Write in detail about the methods of preparation and chemical reactions of cycloalkanes.

SECTION C**3. Attempt any five parts of the following:****5 x 7 = 35**

a.	Explain effect of substituents on reactivity and orientation of mono substituted benzene compounds towards electrophilic substitution reaction.
b.	Write about analytical, synthetic, and other evidence in the derivation of structure of benzene.
c.	Discuss Basicity of amines and effect of substituents on basicity of amines.
d.	Write a detailed note on Iodine value.
e.	Discuss the Haworth synthesis of Anthracene and Phenanthrene.
f.	Illustrate in detail about Baeyer's Strain theory with its limitations.
g.	What do you mean by fats, oils, and waxes? Discuss the chemical reactions of fats, oils and waxes.



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BPHARM
(SEM III) THEORY EXAMINATION 2021-22
PHARMACEUTICAL ORGANIC CHEMISTRY II

Time: 3 Hours**Total Marks: 75****Notes:**

- Attempt all Sections and Assume any missing data.
- Appropriate marks are allotted to each question, answer accordingly.

SECTION-A

Q.1	Attempt All of the following Questions in brief	Marks(10X2=20)
a.	Give the structure and uses of Saccharin.	
b.	Give molecular orbital picture of benzene.	
c.	Explain Saponification value	
d.	Give stability order of cycloalkanes.	
e.	What are the uses of triphenylmethane?	
f.	Mention uses of Naphthalene.	
g.	Define cycloalkanes.	
h.	What is Friedel craft acylation?	
i.	What is Reichert Meissl (RM)	
j.	Draw any four aromatic structures.	

SECTION-B

Q.2	Attempt ANY TWO of the following Questions	Marks(2X10=20)
a.	Discuss in detail Baeyer's strain theory and its limitation.	
b.	Give analytical, synthetic and other evidences in derivation of structure of benzene.	
c.	Give structures, synthesis, reactions and uses of Phenanthrene derivatives.	

SECTION-C

Q.3	Attempt ANY FIVE following Question	Marks (5X7=35)
a.	Give structure, preparation and properties of benzoic acid.	
b.	Write a note on theory of strainless ring.	
c.	Give the structure and uses of BHC and Chloramine T.	
d.	Explain Friedel Crafts for alkylation with suitable examples.	
e.	What is principle and procedure involved in estimation of Iodine value and acetyl value of fat/oil?	
f.	Give the process involved in the synthesis of triphenylmethane and their derivatives.	
g.	Explain Coulson and Moffitt's modification in theory of cycloalkanes. Give reactions of cyclopropane and cyclobutane.	

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B.PHARM.
(SEM III) THEORY EXAMINATION 2022-2023
PHARMACEUTICAL ORGANIC CHEMISTRY-II

Time: 3 Hours

Total Marks: 75

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt all questions in brief.

10 x 2 = 20

- (a) What is Huckel's rule?
- (b) Give structure of DDT and its uses.
- (c) Describe structure and uses of Phenol.
- (d) What is Fat and Oil? Give examples.
- (e) What is Acid value? Give its use.
- (f) Explain Iodine value and its significance.
- (g) Define Saponification value.
- (h) What is Ester value?
- (i) Give resonance structure and uses of Resorcinol.
- (j) Give physical and chemical properties of Naphthalene.

SECTION B

2. Attempt any two parts of the following:

2 x 10 = 20

- (a) Explain Baeyer strain theory of stability of Cycloalkanes and give its limitations.
- (b) Explain Sachse Mohr's theory. Give reactions of cyclopropane and cyclobutane only.
- (c) Explain synthetic and other evidences in the derivation of structure of benzene.

SECTION C

3. Attempt any five parts of the following:

7 x 5 = 35

- (a) Give structures, synthesis, reactions and uses of Anthracene derivatives.
- (b) Explain structure and uses of Saccharin, BHC and Chloramine.
- (c) Define aromatic amines and give resonance structure of Aniline
- (d) Give structure, synthesis and importance of diphenylmethane.
- (e) Why phenols are acidic in nature? Explain effect of substituents on acidity of phenols.
- (f) What is principle and procedure involved in estimation of acid value of fat/oil?
- (g) Explain structure and medicinal uses of Phenanthrene and Triphenylmethane.



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BPHARM
(SEM III) THEORY EXAMINATION 2023-24
PHARMACEUTICAL ORGANIC CHEMISTRY II

TIME: 3HRS**M.MARKS: 75****Time: 3 Hours****Total Marks: 75****Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A****1. Attempt all questions in brief.****10 x 2 = 20**

a.	Mention ortho, meta and para directing groups with examples.
b.	Why aromatic amines are less basic than aliphatic amines.
c.	Mention two qualitative tests for phenol.
d.	Write structure and use of Cresol and Resorcinol.
e.	What is the significance of saponification value?
f.	Write one example of MUFA and PUFA each.
g.	Write structure and uses of Diphenylmethane and triphenylmethane.
h.	What is preferential position for electrophilic substitution reaction in naphthalene.
i.	What synonym is used for Sachse-Mohr theory?
j.	Why cyclopropane is reactive towards ring-opening reactions compared to Cyclobutane?

SECTION B**2. Attempt any two parts of the following:****2 x 10 = 20**

a.	Discuss Aromatic electrophilic substitution reactions. Discuss the reaction and mechanism of Nitration, Friedel-Craft's Alkylation and Friedel-Craft's Acylation Reactions.
b.	Write the synthesis, reactions and medicinal uses of anthracene and phenanthrene.
c.	Discuss Baeyer's strain theory and outline its limitations briefly. What modifications were proposed by Coulson and Moffitt?

SECTION C**3. Attempt any five parts of the following:****7 x 5 = 35**

a.	Write analytical, synthetic evidences in favour of structure of benzene.
b.	Give structure, preparation, and properties of Benzoic acid.
c.	Discuss basicity of amines, and how do different substituents affect their basicity?
d.	What do you mean by hydrolysis, rancidity and drying of oils? How it impacts the quality of oils?
e.	What is iodine value? How it is determined? Enlist methods for determination of iodine values.
f.	How are polynuclear hydrocarbons classified? Discuss the synthesis and reactions of naphthalene.
g.	Discuss the reactions for cyclopropane and cyclobutane.



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BPHARM
(SEM III) THEORY EXAMINATION 2024-25
PHARMACEUTICAL ORGANIC CHEMISTRY II

TIME: 3 HRS**M.MARKS: 75**

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A**1. Attempt all questions in brief.****10 x 2 = 20**

a.	Define "Huckel's rule"
b.	Outline the structure and uses of Saccharin.
c.	Discuss any two qualitative tests for phenols.
d.	Explain, why aliphatic amines are more basic than aromatic amines.
e.	Outline the structure and uses of aryl diazonium chloride.
f.	Distinguish between saturated and unsaturated fatty acids.
g.	Discuss the term "Drying oils".
h.	Discuss the resonating structure, resonance energy and stability of naphthalene and phenanthrene.
i.	Discuss any two important reactions of cycloalkanes
j.	Explain, why cyclopentane is more stable than cyclopropane and cyclobutane?

SECTION B**2. Attempt any two parts of the following:****2 x 10 = 20**

a.	Summarize the reaction and mechanism of Friedel craft's alkylation and Friedel craft's acylation reaction of benzene with suitable example.
b.	Define Lipids. Discuss "acid value" and "saponification value" in detail.
c.	Outline Baeyer's strain theory of stability of cycloalkanes and its limitations.

SECTION C**3. Attempt any five parts of the following:****5 x 7 = 35**

a.	Outline the resonance theory and molecular orbital theory of benzene in detail.
b.	Illustrate the effect of substituent on the orientation and reactivity of mono-substituted benzene ring.
c.	Define aromatic acids. Outline the preparation and reactions of benzoic acid.
d.	Discuss the acidity of phenols and analyze the effect of substituents on the acidity of phenols.
e.	Summarize important reactions of fatty acids.
f.	Outline the preparation and reactions of anthracene.
g.	Describe "Coulson and Moffitt's theory" of cycloalkanes.



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BPHARM
(SEM III) THEORY EXAMINATION 2025-26
PHARMACEUTICAL ORGANIC CHEMISTRY II

TIME: 3 HRS

M.MARKS: 75

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt all questions in brief.

10 x 2 = 20

a.	State Huckel's rule of aromaticity.
b.	Why benzene undergoes electrophilic substitution reactions?
c.	What is Friedel-Crafts acylation?
d.	Define acid value of oils.
e.	What is saponification?
f.	Name any Two Polynuclear Hydrocarbon.
g.	What is Baeyer's strain theory?
h.	How do electron withdrawing groups affect the acidity of carboxylic acids?
i.	Name one qualitative test for phenols.
j.	Write one medicinal use of naphthalene.

SECTION B

2. Attempt any two parts of the following:

2 x 10 = 20

a.	Explain the structure of benzene. Discuss orbital picture, resonance and aromatic nature of benzene with Huckel's rule.
b.	Explain nitration, sulphonation and halogenation reactions of benzene. Add limitations of Friedel-Crafts alkylation.
c.	Explain analytical constants of fats and oils. Describe the principle and significance of acid value, saponification value and iodine value.

SECTION C

3. Attempt any five parts of the following:

7 x 5 = 35

a.	Explain the effect of substituents on reactivity and orientation of mono substituted benzene towards electrophilic substitution reactions.
b.	Explain acidity of phenols and effect of substituents on their acidity. Add qualitative tests of phenols.
c.	Explain basicity of aromatic amines and synthetic uses of aryl diazonium salts.
d.	Describe hydrolysis, hydrogenation, saponification and rancidity of fats and oils. Add a note on drying oils.
e.	Explain synthesis, reactions, structure and medicinal uses of polynuclear hydrocarbons such as naphthalene and anthracene.
f.	Explain Baeyer's strain theory, its limitations and Sachse-Mohr theory of cycloalkanes.
g.	Write structure and uses of DDT, BHC, saccharin and chloramine.