Roll Number ---------- (Total Number of Questions 13) (Total number of Printed Pages 01)

Programme	B. Pharmacy
Semester	3rd
Subject	Pharmaceutical Organic Chemistry-II
Subject Code	BP301T
Paper ID	75105
Time	3Hours
Maximum Marks	75

Instructions to Candidates: *No supplementary/continuation sheet will be issued to the candidates. Answer the questions precisely.*
Section A consists of Ten parts of 2 marks each (Objective Type); Attempt **ALL.*
***Section B consists of Three questions carrying 10 marks each (Long Answer); attempt any **TWO**.*
****Section C consists of Nine questions carrying 5 marks each (Short Answer); attempt any **SEVEN**.*

Section A (10 X2 = 20)

1.	Give very short answers to the followings (2 marks each):
i.	Explain why pyridine is aromatic?
ii.	Give structure and uses of DDT.
iii.	Why phenols are acidic in nature?
iv.	Why aromatic amines are less basic than aliphatic amines?
v.	p- Nitrobenzoic acid is stronger acid than m-Nitrobenzoic acid. Why?
vi.	What are fats and oils?
vii.	Define Ester value.
viii.	What happens when anthracene is treated with sodium and ethyl alcohol?
ix.	Write structure and uses of Diphenylmethane?
x.	How does Cyclobutane react with (a) H_2/Ni (b) Br_2/CCl_4

Section B (2 X 10 = 20)

2.	Discuss the general mechanism and orientation of aromatic electrophilic substitution reaction.
3.	Explain the acidity and effect of substituents on acidity of phenol.
4.	Give detailed account of different analytical constants and their significance in the analysis of fats and oils.

Section C (7 X 5 = 35)

5.	Discuss various evidences to derive the structure of benzene.
6.	Write a note on (a) Reimer-Tiemann Reaction (b) Kolbe Reaction
7.	Write important reactions of benzoic acid.
8.	Write down the detailed mechanism for nitration of benzene.
9.	Comment upon "different reactions of fatty acids".
10.	What is Reichert-Meissl Value? How it is calculated? Discuss its significance.
11.	Write a brief note on the Bayer's strain theory and its limitations.
12.	Write a short note on Sachse Mohr's theory of strainless ring.
13.	Comment upon Electrophilic substitution reactions of Naphthalene.

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23/12/2021 m

Roll Number ---------- **(Total Number of Questions 13)** **(Total number of Printed Pages 01)**

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**** Section C consists of Nine questions carrying 5 marks each (Short Answer); attempt any **SEVEN**.*

Section A

(10 X2 = 20)

1. Give very short answers to the followings (2 marks each):

i.	What is Acid value? What does it indicates?
ii.	Give structure and uses of Anthracene.
iii.	What is Ortho effect?
iv.	Why p-nitrobenzoic acid is stronger acid than m-nitrobenzoic acid?
v.	Draw Boat and Chair confirmations of cycloalkanes.
vi.	Give structure and uses of Diphenylmethane.
vii.	What is Carbylamine reaction?
viii.	What is Sandmeyer's Reaction?
ix.	Explain why melting and boiling points of cycloalkanes are higher than their open chain analogues.
x.	Write in brief about Rancidification.

Section B

(2 X 10 = 20)

2.	What is the effect of substituents on reactivity and orientation of monosubstituted benzene?
3.	Describe synthesis and chemical reactions of Naphthalene.
4.	Discuss general properties of fats and oils with reference to hydrolysis and hydrogenation.

Section C

(7 X 5 = 35)

5.	What is Aromaticity? Explain Hucklè rule giving suitable examples.
6.	Give the mechanism of Reimer- Tiemann Reaction?
7.	Write a note on basicity of aromatic amines.
8.	Give methods for preparation of Benzoic acid.
9.	What is Baeyer's Strain theory and discuss its limitations.
10.	What is Saccharin? Discuss its method of preparation.
11.	Give mechanism of Friedelcraft Acylation.
12.	Explain amonolysis of alkyl halides.
13.	Discuss the acidic nature of aromatic acids.

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4/7/22 M

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Subject Code	BP301T
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****** Section C consists of Nine questions carrying 5 marks each (Short Answer); attempt any SEVEN.***

Section A (10 X2 = 20)

1. Give very short answers to the followings (2 marks each):

i.	Define Huckel's rule with examples.
ii.	Give the structure and use of BHC.
iii.	Give the basicity order of aniline, p-nitroaniline and m-nitroaniline.
iv.	Why phenols are acidic in nature?
v.	Write any two reactions of cyclobutane.
vi.	What are chloramines?
vii.	What is Gatterman reaction?
viii.	How many monosubstituted derivatives are possible for anthracene?
ix.	What are Fats and oils?
x.	Why Aromatic amines are less basic than aliphatic amines?

Section B (2 X 10 = 20)

2.	Comment upon "*Haworth synthesis of naphthalene*". Mention various types of chemical reactions of naphthalene with example.
3.	Elaborate various electrophilic substitution reactions of benzene by giving the detailed mechanism of any one. Discuss in detail the effect of substituents on the reactivity of these reactions.
4.	Write in detail about reactivity, orientation and limitation of Friedel-Crafts Alkylation.

Section C (7 X 5 = 35)

5.	Write in detail about Baeyer's strain theory.
6.	What is Saccharin? Discuss its method of preparation.
7.	Discuss mechanism for nitration of benzene.
8.	Enumerate various qualitative tests carried out for the detection of phenols.
9.	Discuss various synthetic uses of diazonium salts.
10.	What is Saponification value? Give its significance.
11.	Give structure and uses of phenol, cresol and resorcinol.
12.	Write a short note on the structure and medicinal uses of triphenylmethane.
13.	Write down brief note on hydrolysis and hydrogenation of oils.

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121222

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****Section C consists of Nine questions carrying 5 marks each (Short Answer); attempt any **SEVEN**.*

Section- A (10 X2 = 20)

1.	Give very short answers to the followings.
i.	Give one synthetic evidence in support of structure of Benzene.
ii.	What is R.M. value?
iii.	Write any two chemical reactions of Cyclopropane.
iv.	What is hardening of oils?
v.	Give chemical reaction and uses of Diphenylmethane.
vi.	What is Birch reduction reaction?
vii.	Why phenol is acidic in nature?
viii.	What are polynuclear aromatic hydrocarbons? Write down the oxidation and reduction of naphthalene.
ix.	Draw boat and chair conformations of Cyclohexane.
x.	What happens when aromatic amine react with Nitrous acid.

Section- B (2 X 10 = 20)

2.	Discuss the directive effect of substituents on electrophilic substitution in monosubstituted Benzene.
3.	Discuss acid value, saponification value and ester value of fats and oils.
4.	Write a brief note on Baeyer's strain theory and its limitations.

Section- C (7 X 5 = 35)

5.	Discuss the mechanism of nitration of Benzene.
6.	Write a brief note on hydrolysis and hydrogenation of oils.
7.	Write synthesis, chemical reaction and uses of Diphenylmethane.
8.	Discuss the effects of substituents of basicity of Aromatic amines.
9.	Give the electrophilic substitution reaction of Anthracene.
10.	Explain the Sachse-Mohr's theory for Cycloalkanes.
11.	Discuss the general methods of preparation of Aromatic acids.
12.	Define and explain the terms: a. Rancidification b. Drying oils
13.	Write a short note on a. Kolbe's reaction b. Fries rearrangement c. Reimer-Tiemann reaction

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13 JUN 2023

Roll Number ----------(Total Number of Questions 13) (Total number of Printed Pages 01)

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Subject Code	BP301T
Paper ID	75105
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****Section C consists of Nine questions carrying 5 marks each (Short Answer); attempt any **SEVEN**.*

Section- A (10 X2 = 20)

1.	Give very short answers to the followings-
i.	Why benzene undergoes an electrophilic substitution reaction,whereas alkenes undergoan addition reaction?
ii.	Give the structure and uses of DDT and Cresol.
iii.	Define RM Value.
iv.	What is angle strain?
v.	Give one method of preparation of Diphenylmethane.
vi.	What are Polynuclear hydrocarbons? Give one example.
vii.	How phenols are prepared by Dow's process?
viii.	Cyclopropane is the least stable among all the cycloalkanes. Explain why?
ix.	Explain why aromatic amines are less basic than aliphatic amines.
x.	Define Huckel's Rule.

Section- B (2 X 10 = 20)

2.	Discuss the orientation effect of hydroxyl and nitro groups on the benzene.
3.	Explain in detail the different stability theories of cycloalkanes.
4.	Define Polynuclear aromatic hydrocarbons. Give the methods of preparation of Naphthalene.

Section- C (7 X 5 = 35)

5.	Explain in detail the acidity of phenol and discuss the effect of varioussubstituentsonacidity.
6.	Enlist various analytical constants of fats and oils. Explain in detail anyone.
7.	Give ring-opening reactions of cycloalkanes.
8.	Write different methods for the preparation of aromatic amines.
9.	Explain the synthesis of Anthracene by Haworth's method.
10.	Explain the reaction, mechanism, and limitations of Friedal craft alkylation.
11.	Give the chemical reactions of Phenanthrene.
12.	What are aromatic acids. Give any two methodof preparation.
13.	Explain the reaction and mechanism of halogenation of benzene.

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(Morning)

291123

Roll Number ----------(Total Number of Questions 13) (Total number of Printed Pages 01)

Programme	B. Pharmacy
Semester	3rd
Subject	Pharmaceutical Organic Chemistry-II
Subject Code	BP301T
Paper ID	75105
Time	3Hours
Maximum Marks	75

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Section A consists of ten parts of 2 marks each (Objective Type); Attempt **ALL.*
***Section B consists of three questions carrying 10 marks each (Long Answer); attempt any **TWO**.*
****Section C consists of nine questions carrying 5 marks each (Short Answer); attempt any **SEVEN**.*

Section A **(10 X2 = 20)**

1.	Give very short answers to the following:
i.	Define Huckel's rule with an example.
ii.	Write the structure of various types of cresols.
iii.	Give one example of the oxidation reaction of anthracene.
iv.	What is Iodine value?
v.	Write the carbylamine reaction with a suitable example.
vi.	Write any two chemical reactions of cyclopropane.
vii.	Give structure and uses of DDT.
viii.	Define Rancidification.
ix.	How will you synthesize Diphenylmethane?
x.	Define angle strain.

Section B **(2 X 10 = 20)**

2.	Discuss the general mechanism and orientation of Aromatic Electrophilic Substitution Reaction.
3.	Comment upon "the stability of cycloalkanes with the help of various theories."
4.	Give a detailed account of different constants and their significance in the analysis of fats and oils.

Section C **(7 X 5 = 35)**

5.	Why phenols are acidic? Explain the effects of substituents on the acidity of phenols.
6.	Write a brief note on hydrolysis and hydrogenation of oils.
7.	Describe the structure, synthesis and uses of Naphthalene.
8.	Write analytical, synthetic evidence in favour of the structure of benzene.
9.	Give mechanism of - a. Hofmann's degradation reaction b. Reduction of Aldehyde and Ketone
10.	Discuss Sachse-Mohr's theory to explain the concept of strainless rings.
11.	Discuss the mechanism of- a. Curtius reaction b. Schmidt reaction
12.	Write synthesis, chemical reaction and uses of Triphenylmethane.
13.	Give the electrophilic substitution reaction of Anthracene.

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(Evening)

210524

Roll Number ----------(Total Number of Questions 13) (Total number of Printed Pages 01)

Programme	B. Pharmacy
Semester	3rd
Subject	Pharmaceutical Organic Chemistry-II
Subject Code	BP301T
Paper ID	75105
Time	3Hours
Maximum Marks	75

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Section A consists of Ten parts of 2 marks each (Objective Type); Attempt **ALL.*

***Section B consists of Three questions carrying 10 marks each (Long Answer); attempt any **TWO**.*

****Section C consists of Nine questions carrying 5 marks each (Short Answer); attempt any **SEVEN**.*

Section- A **(10X2=20)**

1.	Give very short answers to the followings:
i.	Write Huckel's rule with examples.
ii.	What are aromatic acid? Give physical properties of benzoic acid.
iii.	What are fats and oils?
iv.	What is iodine value?
v.	What are naphthols?
vi.	Define angle strain.
vii.	Write any two reactions of cyclobutane.
viii.	Define aromaticity.
ix.	Give structure and uses of diphenylmethane.
x.	Enlist various physical properties of phenanthrene.

Section- B **(2X10=20)**

2.	Define activating and deactivating groups with examples. Discuss the mechanism of nitration and sulphonation of benzene.
3.	Write a note on basicity of aromatic amines.
4.	Write a brief note on Baeyer's strain theory and its limitations.

Section- C **(7X5=35)**

5.	Explain the mechanism of friedel-craft's acylation.
6.	Give structure, preparation and properties of phenol.
7.	Explain the saponification and rancidity of oils and their significance.
8.	Write a detail note on triphenylmethane..
9.	Compare the stability of cyclobutane with cyclohexane using baeyer's strain theory.
10.	Explain aromaticity and resonance of benzene.
11.	Explain the acidity of aromatic amines.
12.	Write a brief note on hydrolysis and hydrogenation of oils.
13.	Describe in detail the structure of anthracene and naphthalene.

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Evening

18 1124

Roll Number ---------- (Total Number of Questions 13) (Total number of Printed Pages 01)

Programme	B. Pharmacy
Semester	3rd
Subject	Pharmaceutical Organic Chemistry –II
Subject Code	BP301T
Paper ID	75105
Time	3Hours
Maximum Marks	75

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***Section B consists of Three questions carrying 10 marks each (Long Answer); attempt any **TWO**.*
**** Section C consists of Nine questions carrying 5 marks each (Short Answer); attempt any **SEVEN**.*

Section- A **(10X2=20)**

1.	Give very short answers to the followings:
i.	Give chemical reaction and uses of diphenylmethane.
ii.	Define Huckel's rule with an example.
iii.	Write any two reactions of cyclobutane.
iv.	Give structure and uses of DDT.
v.	Enlist various physical properties of phenanthrene.
vi.	What is Birch reduction reaction?
vii.	Define angle strain.
viii.	What is ester value?
ix.	Give the structure and uses of BHC.
x.	Cyclopropane is the least stable among all the cycloalkanes. Explain why?

Section- B **(2X10=20)**

2.	Elaborate various electrophillic substitution reactions of benzene with mechanism of any one. Discuss in detail the effect of substituents on the reactivity of these reactions.
3.	Explain in detail the different stability theories of cycloalkanes.
4.	Give detailed account of different analytical constants and their significance in the analysis of fats and oils.

Section- C **(7X5=35)**

5.	Write a short note on Baeyer's strain theory and its limitations.
6.	Write down brief note on hydrolysis and hydrogentation of oils.
7.	Discuss the reaction, mechanism and limitations of Friedal craft alkylation.
8.	What is sponification value? Give its significance.
9.	Give different methods for preparation of aromatic amines.
10.	Write a short note on the structure and medicinal uses of triphenylmethane.
11.	Enumerate variuos qualitative tests carried out for detection of phenols.
12.	Write a short note on- A) Kolbe's reaction B) Reimer-Tiemann reaction
13.	Comment upon Haworth synthesis of naphthalene.

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(Morning)

050625

Roll Number ---------- (Total Number of Questions 13) (Total number of Printed Pages 01)

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Semester	3rd
Subject	Pharmaceutical Organic Chemistry-II
Subject Code	BP301T
Paper ID	75105
Time	3Hours
Maximum Marks	75

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***Section- B consists of Three questions carrying 10 marks each (Long Answer); attempt any TWO.*
**** Section -C consists of Nine questions carrying 5 marks each (Short Answer); attempt any SEVEN.*

Section- A **(10X2=20)**

1.	Give very short answers to the followings:
i.	Define aromaticity.
ii.	Give the structure and uses of DDT.
iii.	Give any two qualitative tests for phenol.
iv.	Enlist various physical properties of naphthalene.
v.	Give the structure and uses of diphenylmethane.
vi.	How does cyclobutane react with: (a)H_2/Ni (b)Br_2/CCl_4
vii.	Define iodine value.
viii.	What is Sandmeyer's reaction?
ix.	Write any two methods of preparation of cyclopropane.
x.	What is the hardening of oils?

Section- B **(2X10=20)**

2.	Why are phenols acidic in nature? Explain the effect of substituents on the acidity of phenols.
3.	Comment on "the stability of cycloalkanes with the help of various theories".
4.	Enlist the analytical constants of oils and fats. Discuss in detail the acid value and iodine value, and explain their significance.

Section- C **(7X5=35)**

5.	Write the general properties of fats and oils with reference to hydrolysis and hydrogenation.
6.	Explain Baeyer's strain theory.
7.	Highlight the key evidences used to derive the structure of benzene.
8.	Write the important reactions of benzoic acid.
9.	Comment on the electrophilic substitution reactions of naphthalene.
10.	Write a note on the basicity of aromatic amines.
11.	Outline the mechanism of nitration of benzene.
12.	Write a short note on Sachse–Mohr's theory of strainless rings.
13.	What is the Reichert–Meissl value? How is it calculated? Discuss its significance.

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(Morning)

031225

Roll Number ----------(Total Number of Questions 13) (Total number of Printed Pages 01)

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Subject Code	BP301T
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Maximum Marks	75

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***Section- B consists of Three questions carrying 10 marks each (Long Answer); attempt any TWO.*

****Section -C consists of Nine questions carrying 5 marks each (Short Answer); attempt any SEVEN.*

Section- A (10X2=20)

1.	Give very short answers to the followings:
i.	Restate the Huckel's rule.
ii.	Give the structure and uses of BHC.
iii.	Write any two qualitative tests for phenols.
iv.	Construct the structure and uses of resorcinol.
v.	Define iodine value.
vi.	What do you understand by saponification number?
vii.	Outline the synthesis of naphthalene.
viii.	Write the structure and uses of anthracene.
ix.	State the limitation of Baeyer's strain theory.
x.	Give any two reactions of cyclobutene.

Section- B (2X10=20)

2.	Discuss various reactions of benzene in detail.
3.	Explain basicity of amines, effect of substituents on basicity, and synthetic uses of aryldiazonium salts.
4.	Write a detailed note on various reactions of fatty acids.

Section- C (7X5=35)

5.	Elaborate effect of substituents on reactivity and orientation of mono substituted benzene compounds towards electrophilic substitution reaction.
6.	Elaborate various important reactions of benzoic acids.
7.	Write a note on Hydrolysis, Hydrogenation, Saponification and Rancidity of oils.
8.	What are polynuclear hydrocarbons? Discuss methods for their synthesis.
9.	Give structure and uses of Diphenylmethane, Triphenylmethane and their derivatives.
10.	State various postulates of Baeyer's strain theory.
11.	Discuss Sachse Mohr's theory (Theory of strainless rings) in detail.
12.	State the structure and uses of DDT, Saccharin and Chloramine.
13.	What is acid value? How it is determined?

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