(LO 2031)

MARCH 2019

Sub. Code: 2031

B.PHARM. DEGREE EXAMINATION PCI Regulation – SEMESTER III PAPER I - PHARMACEUTICAL ORGANIC CHEMISTRY - II

Q.P. Code: 562031

Time: Three hours

Maximum: 75 Marks I. Elaborate on: Answer any TWO questions. $(2 \times 10 = 20)$

- 1. Discuss three different methods of synthesis of Anthracene. Mention some of its important properties. How can be Anthracene converted to anthraquinone and alizarine.
- 2. Explain the preparation and effect of substituents on the acidic character of phenols.
- 3. Define aromatic electrophlic substitution reactions. Discuss the reaction and mechanism of Nitration, Halogenation, Sulphonation, Friedel-craft alkylation and Friedel-craft arylation.

II. Write notes on: Answer any SEVEN questions.

- 1. Write any three methods for synthesis of Diphenyl methane.
- 2. Explain chemical reactions of aromatic carboxylic acids.
- 3. What are the methods used for the synthesis of phenanthrene.
- 4. Discuss the basicity of amines.
- 5. Write the preparation and synthetic utility of diazonium compounds.
- 6. Explain about Resonance theory of benzene.
- 7. Write any five reactions of naphthalene.
- 8. What are lipids? Write their classification in detail.
- 9. Write a note on Bayer's strain theory.

III. Short answers on: Answer ALL questions.

 $(10 \times 2 = 20)$

 $(7 \times 5 = 35)$

- 1. Difference between an oil and fat.
- 2. Hinsberg test.
- 3. Structure and uses of DDT and BHC.
- 4. Waxes.
- 5. Hybridization.
- 6. Mechanism of Halogenation of benzene.
- 7. Fatty acids.
- 8. Sachse Mohr's theory.
- 9. Saponification value.
- 10. Structure and use of Cresol and Resorcinol.

(LP 2031)

SEPTEMBER 2019

B.PHARM. DEGREE EXAMINATION PCI REGULATION – SEMESTER III SECOND YEAR PAPER I – PHARMACEUTICAL ORGANIC CHEMISTRY – II

Q.P. Code: 562031

Time: Three hours

I. Elaborate on: Answer any TWO questions.

- 1. Explain the facts which supporting Kekule structure of Benzene. Briefly discuss about activating and deactivating group in Benzene.
- 2. Write the general method of preparations and reactions of aromatic amines.
- 3. a. Explain the various reactions of Fatty acidsb. Determination of Iodine value with its significance.

II. Write notes on: Answer any SEVEN questions.

- 1. Describe the effect of substituent of Benzene.
- 2. Explain any three method for preparation of Phenol.
- 3. Write a detailed note on Basicity of amines.
- 4. Write briefly on acidity and effect of substituents of Aromatic acids.
- 5. Explain the determination of acid value with its significance.
- 6. What happens when Naphthalene?
 - a. Reduce with H_2/Ni
 - b. Oxidise with KMnO₄
 - c. Addition of excess Cl_2
 - d. With $Con.HNO_3$ and $Con.H_2SO_4$
 - e. With $Con.H_2SO_4$ at $40^{\circ}C$.
- 7. Explain the Haworth synthesis for Naphthalene.
- 8. Describe about Coulson and Moffitt's modification.
- 9. Explain any two reactions of each of Cyclopropane and Cyclobutane.

III. Short answers on: Answer ALL questions.

- 1. Two synthetic utility of diazonium salt.
- 2. Write any two Qualitative tests for Phenol.
- 3. Preparation of Biphenyl from Benzidine.
- 4. Classify polynuclear hydrocarbons.
- 5. What do you mean Essential fatty acid? Give the examples.
- 6. Give structure and common name of two fatty acid.

7. Explain Williamson's ether synthesis.

Give the structure and uses of the following:

- 8. a) DDT b) Saccharin
- 9. a) *p*-cresol b) 1-Naphthol
- 10. a) Picric acid b) Diphenylmethane

 $(10 \times 2 = 20)$

$(7 \times 5 = 35)$

Sub. Code: 2031

 $(2 \times 10 = 20)$

Maximum: 75 Marks

[LR 0121]

121] JANUARY 2021 Sub. Code: 2031 (MARCH 2020 EXAM SESSION) B. PHARMACY DEGREE EXAMINATION PCI REGULATION – SEMESTER III PAPER I – PHARMACEUTICAL ORGANIC CHEMISTRY – II Q.P. Code: 562031

Time: Three hours

Maximum: 75 Marks

 $(2 \times 10 = 20)$

 $(7 \times 5 = 35)$

 $(10 \times 2 = 20)$

I. Elaborate on: Answer any TWO questions.

- 1. a) Write the general methods for the preparation of Amines.
- b) Enumerate the preparation and synthetic utility of Diazonium salts.
- 2. a) Write the structure of Naphthalene and briefly about the conventions used in Numbering Carbons.
 - b) Haworth synthesis and reactions of Naphthalene.
- 3. Define Aromatic electrophlic substitution reactions. Discuss the reaction and mechanism of Nitration, Friedel-Craft's Alkylation and Friedel-Craft's Acylation Reactions.

II. Write notes on: Answer any SEVEN questions.

- 1. Write any three methods for synthesis of Diphenyl methane.
- 2. Bayer's strain theory.
- 3. Synthesis of Phenanthrene.
- 4. Structure and uses of α , β -Naphthol, Resorcinol and Chloramine.
- 5. Resonance theory of Benzene.
- 6. Chemical reactions of Anthracene.
- 7. Important reactions of Cyclobutane.
- 8. Chemical reactions of Aromatic Carboxylic acids.
- 9. Determination of Acid value.

III. Short answers on: Answer ALL questions.

- 1. Difference between an Oil and Fat.
- 2. Hinsberg test.
- 3. Lipids and its classification.
- 4. Synthesis and uses of Triphenyl methane.
- 5. Waxes.
- 6. Define hybridization.
- 7. Mechanism of Halogenation of benzene.
- 8. Acidity of Phenols.
- 9. Basicity of amines.
- 10. Saponification value.

[BPHARM 0921]

SEPTEMBER 2021 Sub. Code: 2031 (SEPTEMBER 2020 EXAM SESSION)

B.PHARM. DEGREE EXAMINATION PCI Regulation 2017 – SEMESTER III PAPER I – PHARMACEUTICAL ORGANIC CHEMISTRY – II Q.P. Code: 562031

Time: Three hours

I. Elaborate on: Answer any TWO questions.

- 1. Details the mechanism of reactions of Benzene with various electrophiles. Brief notes on orientation of second substituent in mono substitutes Benzene.
- 2. Discuss the principle involved in the determination of analytical constants of Fats and Oils. Write their clinical importance.
- 3. Enumerate the necessary modifications suggested by Coulson Moffit for cyclo alkanes. Give the reactions of Anthracene.

II. Write notes on: Answer any SEVEN questions.

- 1. Draw the orbital picture of Benzene and write a note about it.
- Give the preparations for the following with mechanism:
 i) meta-Dinitro benzene and
 ii) m Cresol.
- 3. Replacement reactions of Diazonium Chloride with mechanism.
- 4. Brief about the basicity of Amines.
- 5. Haworth synthesis of Naphthalene.
- 6. Preparations and reaction of Diphenylmethane.
- 7. One medicinal compound with uses belonging to Triphenylmethane, Phenanthrene and Anthracene.
- 8. Draw the picture of i) Stable cyclohexane and ii) Angle strain in Cycloalkanes.
- 9. Resonance hybrid structure for Phenanthrene and write about its Resonance energy.

III. Short answers on: Answer ALL questions.

- 1. Why oils become rancid?
- 2. Saponification value.
- 3. Structure and medicinal uses of any two diphenylmethane derivatives.
- 4. Classify phenols with examples.
- 5. Structure and medicinal uses of DDT and BHC.
- 6. Give reason for the acidity of the phenols with the help of their resonance structure.
- 7. Schotten –Baumann reaction.
- 8. Compare their acidity: Salicylic acid, Benzoic acid and Nitro benzoic acid.
- 9. Give the reaction that yields soap and glycerol from fats and oils.
- 10. Define the value that is useful in finding the number of alcoholic groups present in fats and oils.

Maximum: 75 Marks

$(7 \times 5 = 35)$

 $(10 \times 2 = 20)$

 $(2 \times 10 = 20)$

[BPHARM 0122]

JANUARY 2022 (MARCH 2021 EXAM SESSION)

Sub. Code: 2031

B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS) PCI Regulation 2017 – SEMESTER III PAPER I – PHARMACEUTICAL ORGANIC CHEMISTRY – II Q.P. Code: 562031

Time: Three hours

I. Elaborate on: Answer any TWO questions.

- 1. Outline any two preparations and three reactions of Phenol. Explain the acidity of Phenol.
- 2. a) Explain the Esterification, Hydrolysis and Hydrogenation reactions of Fatty acids.
 - b) Explain in detail about the determination of Acid value of fats and oils.
- 3. Give the structure, nomenclature, preparation and reactions of Cycloalkanes.

II. Write notes on: Answer any SEVEN questions.

- 1. Write about the aromatic characters of Benzene and give the nitration reaction of it.
- 2. What happens if Phenol reacts with Dilute and Conc. Nitric acid?
- 3. Describe the method of preparation by Gabriel synthesis and the reactions of alkylation, reduction and amide to amine conversion.
- 4. Outline the Electrophilic substitution reactions of aromatic amines.
- 5. Give the preparation and properties of Naphthalene.
- 6. Write a note on Sachse Mohr's theory.
- 7. Give each one synthesis of Phenanthrene, Anthracene and Diphenylmethane.
- 8. Discuss the structure of benzene and explain its stability.
- 9. Give any four reactions of Benzoic acid.

III. Short answers on: Answer ALL questions.

$(10 \ge 2 = 20)$

- 1. Benzene treated with acetyl chloride and anhydrous AlCl₃.
- 2. Explain Williamson's ether synthesis.
- 3. Reaction of Phenol with reactive metals.
- 4. Any one preparation of Biphenyl compounds.
- 5. Define Adduct with examples.
- 6. What happens when Diphenylmethane is treated with $K_2Cr_2O_7$?
- 7. Give the nomenclature for Naphthalene and phenanthrene.
- 8. What do you mean Rancidity of oils?

Give the structure and uses of the following organic compounds:-

- 9. a) Saccharin b) BHC
- 10. a) DDT b) Chloramine

Maximum: 75 Marks

 $(2 \times 10 = 20)$

 $(7 \times 5 = 35)$

[BPHARM 0522]

MAY 2022 (SEPTEMBER 2021 EXAM SESSION)

Sub. Code: 2031

B.PHARM. DEGREE EXAMINATION PCI Regulation 2017 – SEMESTER III PAPER I – PHARMACEUTICAL ORGANIC CHEMISTRY – II *Q.P. Code: 562031*

Time: Three hours

Maximum: 75 Marks

 $(2 \ge 10) = 20)$

 $(7 \times 5 = 35)$

 $(10 \ge 2 = 20)$

I. Elaborate on: Answer any TWO questions.

- 1. Define & classify Polynuclear hydrocarbons. Enumerate the synthesis and reactions of naphthalene.
- 2. Briefly explain about the acidity of aromatic acids and the effect of substituents on acidity.
- 3. Explain the stability of cyclo alkanes on the basis of Bayer strain theory and brief out its limitations.

II. Write notes on: Answer any SEVEN questions.

- 1. Give an account on the Friedel crafts alkylation and Friedel crafts acylation reaction with mechanism.
- 2. Write a note on the synthetic utility of aryl diazonium salts.
- 3. Write a note on the determination of acid value in fats and oils.
- 4. Brief out on Fries rearrangement with mechanism.
- 5. Write a note on the effect of electron withdrawing groups on electrophilic aromatic substitution reaction in benzene.
- 6. Write the synthesis of aryl alkyl ethers from phenol.
- 7. Give an account for reactions of anthracene.
- 8. Write the methods of synthesis of aromatic amines.
- 9. Write a note on the types of rancidity and the methods for prevention of rancidity.

III. Short answers on: Answer ALL questions.

- 1. Write the structure and uses of Saccharin and Chloramine.
- 2. Give a short account on primary, secondary and tertiary amines with examples.
- 3. What is Reichert- Meissl value?
- 4. Brief out on reduction reaction of phenanthrene.
- 5. Define fats, oils and waxes
- 6. Write the reaction of esterification of benzoic acid
- 7. Write on Wurtz Fittig reaction.
- 8. Mention the drawbacks of Friedel crafts alkylation.
- 9. Write the catalytic reduction reaction of propane.
- 10. Write a note on Elb's reaction.

[BPHARM 1022]

OCTOBER 2022 (MARCH 2022 EXAM SESSION)

Sub. Code: 2031

B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS) PCI Regulation 2017 – SEMESTER III PAPER I – PHARMACEUTICAL ORGANIC CHEMISTRY II Q.P. Code: 562031

Time: Three hours

I. Elaborate on: Answer any TWO questions.

- 1. Briefly elaborate on the effect of substituents on benzene during electrophilic substitution reaction.
- 2. Elaborate on the determination of any three analytical constants of fats and oils and their significance.
- 3. Discuss briefly on the acidity of phenols and the effect of substituents on acidity.

II. Write notes on: Answer any SEVEN questions.

- 1. Write a note on diazonium salts.
- 2. Give an account on Kolbe's reaction with mechanism.
- 3. Brief out the tests to differentiate primary, secondary and tertiary amines.
- 4. Write a note on ortho effect on aromatic carboxylic acids.
- 5. Brief out on the hydrolysis and hydrogenation of fats and oils.
- 6. Give an account for the fact that phenols are more acidic than alcohols.
- 7. Give an account on Huckel's rule of aromaticity and orbital theory of benzene.
- 8. Briefly explain the reason for the preference of C9 position than C2 position in anthracene during chemical reactions.
- 9. Write a note on reactions of Benzene.

III. Short answers on: Answer ALL questions.

- 1. Write the method of preparation of picric acid.
- 2. Write the structure and use of Resorcinol and naphthol.
- 3. Give an account on the fate of aniline on reaction with potassium dichromate and sulphuric acid.
- 4. Write a note on Williamson's Ether synthesis.
- 5. Give an account on Coulson and Moffitt's modification in cycloalkanes.
- 6. Define fatty acid and give a detailed classification of fatty acids with examples.
- 7. Give any two examples of electrophilic substitution reactions of naphthalene.
- 8. Write about the ozonolysis reaction of benzene.
- 9. Write the reaction for the synthesis of benzoic acid from Grignard reagent.
- 10. Write on the addition reaction of cyclobutane with halogens.

$(2 \ge 10 = 20)$

 $(7 \times 5 = 35)$

 $(10 \ge 2 = 20)$

Maximum: 75 Marks

[B.PHARM 0323] MARCH 2023 Sub. Code: 2031 (SEPTEMBER 2022 EXAM SESSION)

B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS) PCI Regulation 2017 – SEMESTER III PAPER I – PHARMACEUTICAL ORGANIC CHEMISTRY II

Q.P. Code: 562031

Time: Three hours

I. Elaborate on: Answer any TWO questions.

- 1. Enumerate briefly about the basicity of amines and brief on various chemical reactions of amines.
- 2. Discuss with all possible evidences about the Kekule structure of benzene.
- 3. Depict the synthesis and reactions of anthracene.

II. Write notes on: Answer any SEVEN questions.

- 1. Write a note on the synthesis of diazonium salts.
- 2. Brief out on Reimer Tiemann reaction with mechanism.
- 3. Write a note on the general mechanism of electrophilic substitution reactions of benzene with emphasis on any two examples.
- 4. Write a note on the structure and composition of fats and oils.
- 5. Briefly write a note on the Gatterman reaction.
- 6. Briefly write a note on the reactions of benzoic acid.
- 7. Write any three methods of preparation of phenols.
- 8. Give an account on any two chemical reactions of fats and oils.
- 9. Write a note on drying of oils.

III. Short answers on: Answer ALL questions.

- 1. Write the structure and uses of DDT and BHC.
- 2. Give any one method of synthesis of diphenyl methane.
- 3. HINSBERG test.
- 4. Give an account on Diazo coupling reaction.
- 5. Write any two qualitative tests for phenol.
- 6. Write a brief note on activating and deactivating groups with examples.
- 7. Draw the structure and apply 4n+2 rule for naphthalene and 1, 3 cyclobutadiene.
- 8. Give an account on the resonance stabilization of benzene.
- 9. Give an account on acylation reactions of amines.
- 10. Calculate the angle of strain of cyclopropane.

$(10 \ge 2 = 20)$

Maximum: 75 Marks

 $(2 \ge 10 = 20)$

 $(7 \times 5 = 35)$