Code: 17T00104

Pharm.D I Year Regular & Supplementary Examinations July/August 2019

PHARMACEUTICAL ORGANIC CHEMISTRY

(For 2017 & 2018 admitted batches only)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

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1 Answer the following: (10 X 02 = 20 Marks)

(a) Write short note on intermolecular forces.
(b) Write a note on polarity of bonds.
(c) Explain Lowry Bronsted theory.
(d) Explain the concept of isomerism.
(e) Define Lewis theory.
(f) Write a note on protic solvents.
(g) Mention about oxidation reduction reaction.
(h) Write a note on free radical reaction.
(i) Write on cannizzaro reaction.
(j) Write note on substitution reactions.

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

2 Explain in detail types of isomerism with examples.

OR

3 Explain the nomenclature of various classes of organic compounds with example.

4 Write a detailed note on SN1 reaction.

OR

5 Write a detailed note on SN2 reaction.

6 Discuss on effect of hyper conjugation.

OR

7 Explain electrophilic aromatic substitution in detail.

8 Explain in detail about Claisen condensation.

OR

9 Write a note on Perkin condensation.

10 Compare aliphatic nucleophilic substation with aromatic nucleophilic substitution.

OR

11 Write short notes on assay and test of purity of chlorbutol.

*****

Code: 14T00104 / T0810004

Pharm.D I Year Regular & Supplementary Examinations July 2017

PHARMACEUTICAL ORGANIC CHEMISTRY

(For 2016 and prior to 2016 admitted batches only)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 (a) Explain the mechanism and stereochemistry of S_N2.
(b) Write the differences between S_N1 and S_N2 reaction.

2 (a) Discuss the stability of alkenes.
(b) Write the mechanism of free radical addition.

3 (a) Write the orbital picture and resonance stabilization of allyl radical.
(b) Discuss the mechanism of electrophilic addition to conjugate diene.

4 (a) Write the mechanism of friedel crafts reaction and classification of substituent groups in electrophilic aromatic substitution.
(b) Write a note on effect of halogen on electrophilic aromatic substitution in a alkyl benzene.

5 (a) Discuss the various reactions of conversion of carboxylic acid to carboxylic acid chloride and esters.
(b) Write a note on Knoevenagel reaction.

6 (a) Write the mechanism of Benzoin condensation.
(b) Write a note on Reimer Tiemann and Kolbe reactions.

7 (a) Compare aliphatic nucleophilic substitution with that of aromatic nucleophilic substitution.
(b) Write a note on oxidation and reduction reactions.

8 (a) Write the preparation and uses of dimercaprol and urea.
(b) Write the test for purity and assay of mephenesin.

*****

Code: 14T00104 / T0810004

Pharm.D I Year Advanced Supplementary Examinations January 2018

PHARMACEUTICAL ORGANIC CHEMISTRY

(For 2016 and prior to 2016 admitted batches only)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 (a) Explain the reactivity and orientation in Electrophilic aromatic substitution with activating and deactivating O, P and M directing groups.

(b) Give the mechanism involved in nitration reaction.

2 Give the mechanism involved in:

(a) Kolbe reaction.

(b) Reimer Tiemann reactions.

3 Describe two mechanisms of aliphatic nucleophilic substitution reactions. Compare and contrast these two reactions in detail.

4 Explain with examples free radical halogenations of alkenes with respect to carbon-carbon double bond acting as a substituent.

5 Explain the mechanisms of following name reactions:

(a) Reformatsky reaction.

(b) Cannizzaro reaction.

6 Write the structure, preparation, assay and chemical uses of:

(a) Chlorbutol.

(b) Ethylene diamine dihydrate.

7 (a) Write short notes on E2 Vs E1 reactions with suitable example.

(b) Discuss about Dehydrohalogenation of Alkyl Halides.

8 (a) Write a note on orbital picture of Allyl Radical.

(b) Write a note on electrophilic addition to conjugated dienes with suitable examples.

*****

Code: 17T00104

Pharm.D I Year Advanced Supplementary Examinations December 2018

PHARMACEUTICAL ORGANIC CHEMISTRY

(For students admitted in 2017 only)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

*****

1 Answer the following: (10 X 02 = 20 Marks)

(a) Write the suitable chemical structure for 1.3 pentadiene and ethyl acetoacetate.
(b) Give any two examples for protic and aprotic solvents.
(c) Define Lowry Bronsted theory.
(d) Write examples for acid chloride and ester.
(e) Write the general reaction for Fries rearrangement.
(f) Define hybridization.
(g) Mention the uses of Vanillin.
(h) Write about mesomeric effect.
(i) Draw Orbital picture of allyl radical.
(j) Write Huckel's rule.

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

2 What do you mean by polarity of bonds? Give a note on the mechanism of chain reactions of alkanes.

OR

3 (a) Write about the preparation of cycloalkanes.
(b) Give a note on Bayer strain theory.

4 Elaborate on the nucleophilic substitution for allylic and vinylic substrates.

OR

5 Explain Markovnikov's rule and Peroxide effect.

6 Explain the Friedel Crafts Acylation with necessary equation.

OR

7 Explain about the effect of halogen on electrophilic substitution reaction in alkyl benzene and resonance stabilization of benzyl radical.

8 Discuss on Perkin and crossed aldol condensation with mechanism.

OR

9 Give an account on:
(a) Sandmeyer's reaction.
(b) Knovenagel reaction.

10 Give a detailed note on bimolecular displacement mechanism.

OR

11 Write the structure, preparation, test for purity and medicinal uses of Aspirin and dimereaprol.

*****

Code: 14T00104 / T0810004

Pharm.D I Year Advanced Supplementary Examinations December 2018

PHARMACEUTICAL ORGANIC CHEMISTRY

(For 2016 and prior to 2016 admitted batches only)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 (a) Explain the theory of Acids and Bases with examples.
(b) Write the nomenclature of the following organic compounds:
(i) Alkanes. (ii) Aldehydes.

2 (a) Write any there preparations of cycloalkanes.
(b) Explain the orbital picture of angle strain.

3 (a) Explain the mechanism and kinetics of SN1 reaction.
(b) Write in brief about dehydration of alcohols.

4 (a) Explain in brief cycloaddition reaction.
(b) Write free radical substitution in alkanes.

5 (a) Write the reactions of electrophilic addition to conjugated dienes.
(b) Write the mechanism of nitration.

6 (a) Explain the structure of carboxylate ions.
(b) Write the mechanism of Cannizzaro reaction with example.

7 (a) Explain in brief acidity of phenols.
(b) Write in brief bimolecular displacement mechanism.

8 (a) Write a brief note on oxidation-reduction reaction.
(b) Write the preparation, assay and uses of the following:
(i) Chlorbutol. (ii) Dimercaprol.

*****

Code: 14T00104 / T0810004

Pharm.D I Year Supplementary Examinations July/August 2019

PHARMACEUTICAL ORGANIC CHEMISTRY

(For 2016 & prior to 2016 admitted batches only)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 (a) Define polarity of bonds and add a note on isomerism.
(b) Explain the nomenclature of alkanes.

2 (a) Write any two preparations of cycloalkanes.
(b) Explain in brief mechanism and stability of free radical chain reaction of alkanes.

3 (a) Explain the mechanism and kinetics of SN2 reaction.
(b) Explain the E2 versus E1 reactions.

4 (a) Explain in brief Markownikoff's rule with example.
(b) Write a note on free radical halogenations of alkenes.

5 (a) Mention the Stability of Conjugated Dienes.
(b) Explain with example the Friedel-Crafts alkylation.

6 (a) Discuss in brief the structure of carboxylate ion.
(b) Write the mechanism of Perkin condensation with example.

7 (a) Write the mechanism of Kolbes reaction.
(b) Explain the orientation in nucleophilic aromatic substitution.

8 Write the preparation, assay and uses of the following:
(a) Chlorbutol.
(b) Dimercaprol.
(c) Aspirin.
(d) Methyl salicylate.

*****

Code: 14T00104 / T0810004

Pharm.D I Year Supplementary Examinations July/August 2021

PHARMACEUTICAL ORGANIC CHEMISTRY

(For 2016 & prior to 2016 admitted batches only)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 (a) Explain the theory of acids and bases with examples.

(b) Give the nomenclature of:

(i) CH_3-CH_2-CH_2-COOH.

(ii) OH-CH_2-CH_2-CH_2-CHO.

(iii) Cl-CH_2-CH_2-CH_2-CH_2-CH_2-Cl.

2 (a) Write the preparations of cycloalkanes.

(b) Differentiate SN1 and SN2 reaction.

3 (a) Write the reaction, kinetics, mechanism, and evidences of E2 reaction.

(b) Write the reaction, mechanism and example of peroxide effect.

4 (a) Write the orbital picture and resonance stabilization of Allylic radical and Allylic cation.

(b) Explain the reaction and mechanism of halogenation and friedel crafts alkylation of benzene.

5 (a) Give short notes on acidity of carboxylic acid and effect of substituents on acidity.

(b) Write the general reactions and examples for conversion of acid into esters and amide derivatives.

6 (a) Write short notes on Perkin condensation.

(b) Write the mechanism of Aldol condensation with example.

7 (a) Write a short note on Sandmeyer's reaction with example.

(b) Write the mechanism of nucleophilic aromatic substitution reaction.

8 (a) Give a short note on oxidation reduction reactions with examples.

(b) Write the preparation, assay and medicinal uses of:

(i) Methyl salicylate.

(ii) Tartaric acid.

(iii) Glyceryl trinitrate.

(iv) Benzyl benzoate.

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Code: 17T00104

Pharm.D I Year Regular & Supplementary Examinations December 2020

PHARMACEUTICAL ORGANIC CHEMISTRY

(For 2017, 2018 & 2019 admitted batches only)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

*****

1 Answer the following: (10 X 02 = 20 Marks)

(a) Define polarity of bonds.
(b) What are protic and aprotic solvents?
(c) What are carbocations?
(d) Define hydrogenation.
(e) What is 1, 4-addition?
(f) Define Friedel-Crafts Acylation.
(g) Conversion of acid to amide.
(h) What is acidity constant?
(i) Write the medicinal uses of salicylic acid.
(j) Give the test for purity of vanillin.

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

2 Explain in detail about isomerism with examples.

OR

3 Discuss in detail about Baeyer strain theory.

4 (a) Write the mechanism and kinetics of SN2 reaction.
(b) Compare SN2 vs SN1.

OR

5 (a) Write a note on Halohydrin formation.
(b) Explain in detail about peroxide effect.

6 (a) Explain about dehydration of alcohols.
(b) Write in brief Markownikoffs rule.

OR

7 (a) Write the mechanism of nitration.
(b) Write a note on resonance in alkenes.

8 Discuss in brief structure of carboxylate ions.

OR

9 (a) Write the mechanism of Aldol condensation.
(b) Write the mechanism of Hofmann rearrangement.

10 Explain in brief oxidation-reduction reaction.

OR

11 Write the preparation and assay for Dimercaprol and Aspirin.

*****

Code: 17T00104

Pharm.D I Year Regular Examinations July/August 2018

PHARMACEUTICAL ORGANIC CHEMISTRY

(For 2017 admitted batches only)

Time: 3 hours Max. Marks: 70

PART - A

(Compulsory Question)

*****

1 Answer the following: (10 X 02 = 20 Marks)

(a) Define dipole moment.
(b) Write the suitable chemical structure for cycloheptanone and 2-chloro-1-ethyl butanal.
(c) Define acid catalysis.
(d) Give a note on the stability of alkenes.
(e) Give two reactions of cycloalkanes.
(f) Write any one preparation of glycol.
(g) What are epoxides?
(h) What is Saytzeff's rule?
(i) What is Hinsberg reaction?
(j) Mention the medicinal uses of lactic acid and citric acid.

PART - B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT - I

2 Distinguish enantiomers & diastereomers. Give a detailed note on geometrical isomers.

OR

3 Explain about acid base theory. Distinguish between non-ionic and ionic solutes.

UNIT - II

4 Explain the mechanism, reactivity and orientation of E1 & E2 reactions.

OR

5 Explain about the mechanism and kinetics of SN2 reaction.

UNIT - III

6 What do you mean resonance & hyper conjugation? Explain 1, 2 versus 1, 4 addition.

OR

7 Discuss the mechanism of electrophilic substitution reaction of conjugated dienes (sulfonation and halogenations)

UNIT - IV

8 Explain the following reaction with mechanism.

(a) Cannizzaro reaction.
(b) Williamson synthesis.

OR

9 Explain the following reaction with mechanism.

(a) Reformatsky reaction.
(b) Reimer Tiemann reactions.

UNIT - V

10 Explain about the oxidation reduction reactions.

OR

11 Write the structure, preparation, test for purity and medicinal uses of Mephenesin & Salicylic acid.

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Code: 14T00104/ T0810004

Pharm.D I Year Supplementary Examinations July/August 2018

PHARMACEUTICAL ORGANIC CHEMISTRY

(For 2016 and prior to 2016 admitted batches only)

Time: 3 hours Max Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 (a) What are Protic and Aprotic solvents? Explain in brief the polarity of bonds.
(b) Explain the nomenclature of the following organic compounds.
(i) Carboxylic acids. (ii) Phenols.

2 (a) Write the free radical mechanism of alkenes.
(b) Explain in brief Baeyer strain theory of cycloalkenes.

3 (a) Explain the mechanism and kinetics of SN2 reaction.
(b) Explain the elimination versus substitution.

4 (a) Explain in brief Markownikoff's rule with example.
(b) Write a note on free radical mechanism of alkenes.

5 (a) Explain the stability of conjugated Dienes.
(b) Explain Friedel craft alkylation with example.

6 (a) Write the conversion of acid to acid chloride, esters and amides.
(b) Write the mechanism of Benzoin condensation with example.

7 (a) Write a note on Basicity of Amines.
(b) Write the mechanism of Perkin condensation.

8 (a) Write the comparison of aliphatic nucleophilic substitution with that of aromatic.
(b) Write the preparation, assay and uses of the following:
(i) Benzyl benzoate. (ii) Mephenesin.

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Code: 17T00104

Pharm.D I Year Regular & Supplementary Examinations December 2021

PHARMACEUTICAL ORGANIC CHEMISTRY

(For 2017, 2018, 2019 & 2020 admitted batches only)

Time: 3 hours

Max. Marks: 70

PART – A

(Compulsory Question)

*****

1 Answer the following: (10 X 02 = 20 Marks)

(a) Define polarity bonds with example.
(b) Write any two structures for aldehydes.
(c) Define nucleophiles and electrophiles with example.
(d) Write the reaction for peroxide effect.
(e) Write 1, 2 versus 1, 4 – addition.
(f) Define with examples activating and deactivating directing groups.
(g) Compare alkyl nucleophilic substitution with acyl nucleophilic substitution.
(h) Write the conversion of acid to acid chloride with example.
(i) Write the preparation of chlorobutanol.
(j) Define with example oxidation-reduction reactions.

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

2 (a) Explain in detail about Bayer Strain theory.
(b) Write the nomenclature for alkenes.

OR

3 (a) Write a note on acids and bases according to Lowry Bronsted and Lewis theories.
(b) Write a short note on isomerism.

4 Explain the mechanism, kinetics and stereochemistry of SN1 reaction.

OR

5 (a) What is heat of hydrogenation? Explain the MarkowniKoff's rule.
(b) Write a note on dehydration of alcohols.

6 Write the mechanism for sulphonation and halogenation reactions.

OR

7 Explain in brief electrophilic addition to conjugated dienes and add a note on orientation.

8 (a) Explain the basicity of amines.
(b) Write a note on acidity of phenols.

OR

9 Explain the mechanism for Kolbe reaction and Fries rearrangements.

10 Write the preparation, test for purity, assay and uses for methyl salicylate and citric acid.

OR

11 (a) Write in brief oxidation-reduction reactions.
(b) Give the preparation, assay and uses for aspirin.

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e: 14T00104 / T0810004

Pharm.D I Year Supplementary Examinations December 2021

PHARMACEUTICAL ORGANIC CHEMISTRY

(For 2016 & after 2010 admitted batches only)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 (a) Explain the different steps involved in the free radical substitution reaction of alkanes.
(b) Write about the free radical addition to a carbon - carbon double bond.

2 (a) Explain about the substitution nucleophilic bimolecular (SN2) reaction.
(b) Write in detail about Elimination (E2) reaction with reaction mechanism.

3 (a) Explain about the resonance hybrid, stability, orbital picture and resonance stabilization of Allyl radical.
(b) Define hyper conjugation and write about the nucleophilic substitution in allylic substrate.

4 (a) Write about the Friedel Craft Acylation with reaction mechanism in benzene.
(b) Explain the reaction mechanism involved in the conversion of carboxylic acid to acid chlorides and esters.

5 (a) Brief explain the reaction mechanism involved in Benzoin condensation.
(b) Discuss the reaction mechanism involved in Reformatsky reaction.

6 (a) Write about the Williamson synthesis reaction with mechanism.
(b) Explain Reimer - Tiemann reaction with mechanism.

7 (a) Write about the reduction reaction of carbonyl compounds with different reducing agents.
(b) Write the structure of carboxylate ion and write about the nucleophilic acyl substitution reactions of carboxylic acid.

8 (a) Explain preparation, test for purity, assay and medicinal uses of Lactic acid.
(b) Briefly discuss the preparation, test for purity, assay and medicinal uses of Mephenesin.

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Code: 17T00104

Pharm.D I Year Regular & Supplementary Examinations November/December 2022

PHARMACEUTICAL ORGANIC CHEMISTRY

(For 2017, 2018, 2019, 2020 & 2021 admitted batches only)

Time: 3 hours | Max. Marks: 70

PART – A

(Compulsory Question)

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1 Answer the following: (10 X 02 = 20 Marks)

(a) Write a short note on M.P and B.P. 2M

(b) Give a brief note on Isomerism. 2M

(c) What are nucleophiles and electrophiles and give examples? 2M

(d) Write a brief note on Markownikoff"s rule. 2M

(e) Write a short note on Friedel Crafts alkylation. 2M

(f) Explain in brief about the effects of halogen on electrophilic aromatic substitution in alkyl benzene. 2M

(g) Write any two nucleophilic acyl substitution reactions. 2M

(h) Write a brief note on ionization of carboxylic acids. 2M

(i) Write any two differences between aliphatic and aromatic nucleophiclic substitution. 2M

(j) Write the medicinal uses of urea and dimercaprol. 2M

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

2 Write a detailed note on nomenclature of alkanes, alkenes & alkynes. 10M

OR

3 Explain about Bayer Strain theory and total picture of angle strain. 10M

4 Write short notes on mechanism and kinetics of SN1, SN2 reactions. 10M

OR

5 (a) Write a detailed note on dehydro halogenation of alkyl halides. 5M

(b) Write in brief about elimination versus substitution. 5M

6 (a) Write a short note on hyper conjugation. 4M

(b) Give a brief account on nucleophilic substitution in allylic substrate and vinyllic substrate. 6M

OR

7 Write a detailed note on electrophilic aromatic substitution. 10M

8 Write a detailed note on nucleophilic addition reaction. 10M

OR

9 Write a note on Claisen condensation and Michael addition. 10M

10 Explain in detailed about nucleophilic aromatic substitution. 10M

OR

11 Write the preparation, tests for purity, assay and medicinal uses of ethylene. 10M

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