

Unit-1

Benzene and its derivatives

A. Analytical, synthetic and other evidences in the derivation of structure of benzene, Orbital picture, resonance in benzene, aromatic characters, Huckel's rule

B. Reactions of benzene – nitration, sulphonation, halogenation– reactivity, Friedelcrafts alkylation– reactivity, limitations, Friedelcrafts acylation.

C. Substituents, effect of substituents on reactivity and orientation of mono substituted benzene compounds towards electrophilic substitution reaction

D. Structure and uses of DDT, Saccharin, BHC and Chloramine

DEPTH OF BIOLOGY

10/15 Marks

Q.1 Discuss reaction of benzene [Nitration, Halogenation, Friedan craft acylation] ?

Q.2 Write down the analytical, synthetic & other evidence in the derivation of structure of benzene ?

5 Marks

Q.1 Write a short note on Huckle's rule ?

2/3 Mcq

Q.1 Write the structure & uses of DDT ?

Q.3 Explain Nitration. ?

Q.2 Define Huckle rule ?

Unit-2

- Phenols* – Acidity of phenols, effect of substituents on acidity, qualitative tests, Structure and uses of phenol, cresols, resorcinol, naphthols
- Aromatic Amines* – Basicity of amines, effect of substituents on basicity, and synthetic uses of aryl diazonium salts
- Aromatic Acids*
–Acidity, effect of substituents on acidity and important reactions of benzoic acid

DEPTH OF BIOLOGY

5/7 Marks

Q.1 Write down the important reaction of benzoic acid ?

Q.2 Define Acidity of phenol & effect of substituent on acidity of phenol ?

2/3 MCQ

Q.1 Write down the uses of Aryl diazonium salt ?

Q.2 Explain basicity of amine ?

Unit-3

Fats and Oils-

a. Fatty acids- reactions.

b. Hydrolysis, Hydrogenation, Saponification and Rancidity of oils, Drying oils.

c. Analytical constants- Acid value, Saponification value, Ester value, Iodine value, Acetyl value, Reichert Meissl (RM) value- significance and principle involved in their determination.

DEPTH OF BIOLOGY

10/15 Marks

Q.1 Explain the term Saponification, Rancidity of Oil & Hydrogenation ?

Q.2 Explain the Analytical constant Saponification, Iodine value & RM value ?

5/7 Marks

Q.1 Define Acid value & its Significance ?

2/3 MCQ

Q.1 Define fat ?

Q.2 Explain the term oil ?

Unit-4

Polynuclear hydrocarbons:

a. Synthesis, reactions

b. Structure and medicinal uses of Naphthalene, Phenanthrene, Anthracene, Diphenylmethane, Triphenylmethane and their derivatives

DEPTH OF BIOLOGY

10/15 Marks

Q.1 Write down the synthesis & reaction of Anthracene & Naphthalene ?

Q.2 Give a detail note on Polynuclear Hydrocarbon ?

5/7 Marks

Q.1 Write down the synthesis & reaction of Diphenylmethane & Triphenylmethane ?

2/3 MCQ

Q.1 Draw the structure of Phenanthrene ?

Unit-5

Cycloalkanes–

Stabilities– Baeyer's strain theory, limitation of Baeyer's strain theory, Coulson and Moffitt's modification, Sachse Mohr's theory (Theory of strainless rings), reactions of cyclopropane and cyclobutane only

DEPTH OF BIOLOGY

5/7 Marks

Q.1 Explain Baeyer Strain theory & its limitations ?

Q.2 Define Coulson Moffit's Modification ?

Q.3 Explain the theory of strainless rings [Sachse Mohr's Theory] ?

Q.4 Write down the reaction of Cyclopropane & Cyclobutane ?