

Pharmaceutical Organic Chemistry-II

B. Pharm Improvement Examination (2020-2021)

Date: 21/09/2020

Semester: 3

Subject: Pharmaceutical Organic Chemistry-II (BP301T)

Instructions:

- All Questions are compulsory
- Each question carry 1 mark.

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Your answer

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Which one is more acidic? *

- 4-Nitrobenzoic acid
- Benzoic acid
- 4-methoxybenzoic acid

Carboxylic acids reacts with phosphorus (v) chloride at room temperature to form _____ *

- Alcohols
- Acids
- acyl chloride
- Amines

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Cyclobutane reacts with hydrogen in the presence of nickel catalyst at 200 C to give..... *

- Butane
- 1-Butene
- 2-Butene
- None of these

Which reducing agent is used for the reduction of nitro compound to phenyl amine? *

- LiAlH₄
- Sn/HCl
- Na/alcohol
- H₂/Ni

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Carboxylic acid can be converted into alcohol in presence of _____ *

- LiAlH₄/ether
- Sn/Hcl
- H₂so₄
- Hcl

Which of the following correctly orders the relative steric energies of conformations of cyclohexane? *

- E(boat) < E(twist-boat) < E(chair)
- E(chair) < E(boat) < E(twist-boat)
- E(chair) < E(twist-boat) < E(boat)
- E(twist-boat) < E(boat) < E(chair)

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Which statement about cyclohexane is incorrect? *

- Cyclohexane suffers ring strain.
- H atoms occupy equatorial or axial sites.
- Each C atom is sp³ hybridized.
- The cyclohexane ring can flip between chair and boat conformers.

Least stable cycloalkane is *

- cyclopropane
- cyclobutene
- cyclopentane
- cyclohexane

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According to Huckel's rule which one is not aromatic? *

- Benzene
- Pyridine
- Cyclohexane
- Napthalene

Phenol is more acidic than *

- Carboxylic acid
- Alcohol
- A and B
- Hydrochloric acid

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Melting point of phenol is relatively high for an aryl compound because of the *

- hydrogen bonding
- ionic bonding
- covalent bonding
- all of them

Identify the incorrect statement regarding cycloalkenes *

- The bonds in them are fewer compared to those in alkenes
- They occur in gaseous form in nature
- These undergo polymerization
- The conjugated double bonds in them increase their stability

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p-amino azo benzene is obtained by treating diazonium chloride with which of the following compound? *

- Benzene
- Aniline
- Phenol
- Benzoic acid

Which of the following statements is incorrect: aromatic compounds... *

- are Cyclic
- are planar
- Are generally less reactive than similarly substituted
- Have 4n π-electrons

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Nitration of a benzene molecule shows reaction of *

- Addition reaction
- Nucleophilic reaction
- Substitution reaction
- Electrophilic substitution

Which of the following is not associated with electrophilic aromatic substitution?

- The formation of nitrobenzene
- The formation of benzyne
- The formation of bromobenzene
- The formation of benzene sulfonic acid

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When considering electrophilic aromatic substitution reactions the halides are described as... *

- Ortho/para directing and activating
- Ortho/para directing and deactivating
- Meta directing and activating
- Meta directing and deactivating

Bromine reacts with phenol and decolorize orange color and turns it to *

- white precipitate
- pink precipitate
- blue precipitate
- black precipitate

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With respect to the electrophilic aromatic substitution of benzene which of the following is not true? *

- A non-aromatic intermediate is formed
- Benzene acts as an electrophile
- A proton is lost in the final step
- Resonance forms are important

The Friedel-Crafts alkylation... *

- Works very well for primary chlorides
- Works very well for tertiary chlorides
- Works very well for acyl chlorides
- Works very well without a catalyst

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Phenols undergo nitration in concentrated nitric acid to produce *

- nitro phenol
- dinitrophenol
- trinitrophenol
- tetra phenol

Phenol reacts vigorously with sodium metal giving off *

- hydrogen gas
- sodium phenoxide
- nitrogen gas
- both A and B

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Which of the following method cannot be used for preparation of aromatic amine? *

- Gabriel phthalimide synthesis
- Reduction of nitro compound
- Reduction of nitrile with LiAlH_4
- Decarboxylation of amino acids

What is the general formula of Diazonium salt? *

- $\text{RN}_2 + \text{X}^-$
- RN^+
- RXI
- $\text{RN}_2 + \text{HSO}^-$

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When benzyl alcohol is oxidised with KMnO_4 , the product obtained is which of the following compound? *

- Benzaldehyde
- Benzoic acid
- CO_2 and H_2O
- Benzophenone

Which of the following gives benzoic acid on oxidation? *

- Chlorophenol
- Chlorotoluene
- Chlorobenzene
- Benzyl chloride

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Identify the incorrect statement regarding cycloalkanes *

- These have sp^3 hybridized carbons
- These have tetrahedral bond angles
- Stability of the cycloalkanes varies directly with their respective size
- These undergo nucleophilic substitution reactions

Identify the incorrect statement regarding cyclohexane: *

- It is non-polar
- It serves as an organic solvent
- It is a hydrophilic hydrocarbon
- It is commercially used for variety of applications

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cyclohexane at room temperature exist mainly in the form *

- boat form
- envelop form
- chair form
- twisted chair form

Sodium benzoate on heating with soda-lime gives *

- Sodium Phenoxide
- Benzene
- Benzaldehyde
- Benzophenone

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Which of the following dicarboxylic acids contains three carbon atoms? *

- Adipic acid
 Malonic acid
 Succinic acid
 Glutaric acid

The greater the orbital overlap on adjacent atoms, *

- the stronger the bond
 the weaker the bond
 makes no difference in bond strength
 orbitals never overlap

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Name the process associated with acylation of benzene. *

- Friedel craft reaction
 Wurtz reaction
 Wurtz fitting reaction
 Debey Huckel reaction

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Compare to benzene, nitration of toluene takes place at *

- Same rate
 Faster rate
 Slower rate
 Can not predict

p-nitrotoluene on treatment with chlorine in the presence of FeCl₃ gives *

- m-chlorotoluene
 2-chloro-4-nitrotoluene
 p-chlorotoluene
 2-Nitro-4-chlorotoluene

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