

SEAT No. _____

[8]



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Sardar Patel University

B. Sc. (Semester – III) Examination

Date: 29TH September 2022

Time: 12:30pm to 02:30pm

Industrial Chemistry

COURSE NO: US03ECHE04 (Organic Chemistry)

Notes: Figures to the right indicate full marks.

Total marks: 70

Q.1 Answer the following Multiple Choice Questions. (All are compulsory) (10)

- Which molecule from the below give intermolecular H- bond ?
 - R-OH
 - R-SH
 - R-O-R
 - R-CO-R
- Arrange the following atoms in decreasing order of electro negativity. 1. Cl, 2. Br, 3. I
 - 3>2>1
 - 1>2>3
 - 3>1>2
 - 2>1>3
- Which of the following is most stable carbocation ?
 - CH₃⁺
 - (H₃C)₃C⁺
 - (Ph)₃C⁺
 - CH₃-CH₂⁺
- Which of the following compound is Aspirin?
 - Methyl salicylate
 - Salicylic acid
 - Phenyl salicylate
 - Acetyl salicylic acid
- Sodium phenoxide reacts with CO₂ at 125°C under 5 atm pressure to give salicylic acid, reaction known as
 - Kolbe's reaction
 - Perkins reaction
 - Wurtz reaction
 - HVZ reaction
- Phenol reacts with excess bromine water to give...
 - o- bromo phenol + p-bromo phenol
 - Bromobenzene
 - 2,4,6-tribromophenol
 - m-bromophenol
- Cannizzaro reaction is not given by...
 - Formalehyde
 - Trimethylacetaldehyde
 - Acetaldehyde
 - Benzaldehyde
- Which of the following will have the highest boiling point?
 - Methanal
 - Ethanal
 - Propanal
 - Butanal

9. Amines are generally classified as...
 - A. Weak acids
 - B. Strong acids
 - C. Weak bases
 - D. Strong bases
10. Alkyl halides react with ammonia in presence of base to form...
 - A. Primary amines
 - B. Nitrated alkyl amines
 - C. Amides
 - D. Quarternary ammonium salts.

Q.2 Are the following statements True Or False? (All are compulsory) (08)

1. Sp^3 is the state of hybridization of carbon in carbanion.
2. A Nucleophile is An electron rich speciesd.
3. Phenol reacts with excess bromine water to give 2,4,6-tribromophenol.
4. Alcohols group forms the strongest H-bond to water molecules compare to Phenol.
5. Ketones are prepared by oxidation of Secondary alcohol.
6. The appearance of a silver mirror in Tollen's test indicates presence of An aldehyde.
7. Amines are generally classified as Weak bases.
8. Aromatic primary amines react with cold nitrous acids to form Diazonium salts.

Q.3 Answer the following short questions (Any Ten) (20)

1. Explain the boiling point of HF and HCl.
2. 2-chlorobutanoic acid is a stronger acid than butanoic acid, explain.
3. Define term Steric effect.
4. Explain an acidity of phenol.
5. Give structure and preparation of epoxide.
6. Define term "Williamson Synthesis" of ethers.
7. Why, lower aldehyde and ketones are appreciable soluble in water.
8. Define term "Alcoholysis".
9. Write a reaction for acidity of α - hydrogen of aldehydes.
10. Write a synthesis of 1,2,3-tribromobenzene from *p*-nitroaniline
11. Define term Exhaustive methylation.
12. Write a synthesis of *p*- bromo aniline from aniline.

Q.4 Write a notes on following: (Any Four) (32)

1. Postulates of Resonance theory
2. Inductive effect.
3. "Oxymercuration-demercuration" for preparation of alcohol.
4. Addition of Grignard reagent in carbonyl compound for preparation of alcohol.
5. Nucleophilic addition to aldehydes and ketones can be catalyzed by acid.
6. Acid-catalyzed halogenation of ketones.
7. Hinsberg Test.
8. Effect of substituent on basicity of aromatic amines.

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