

[44/A-14]

Seat No : _____

No. of Printed Pages : 02

SARDAR PATEL UNIVERSITY
B.Sc. Industrial Chemistry
(Semester – 3rd) EXAMINATION
29th November 2019, Friday
Course No: US03ECHE04
(Organic Chemistry)

Total Marks: 70

Time: 2:00 pm to 4:00 pm

Q.1 Answer the given multiple choice questions. [10]

- The decreasing order of I-effect is as
a) $\text{NO}_2 > \text{F} > \text{COOH} > \text{C}_6\text{H}_5$
b) $\text{NO}_2 > \text{C}_6\text{H}_5 > \text{COOH} > \text{F}$
c) $\text{NO}_2 > \text{COOH} > \text{F} > \text{C}_6\text{H}_5$
d) None of these
- The decreasing order of 'S' character in the three hybrid orbitals is
a) $\text{SP} > \text{SP}^2 > \text{SP}^3$
b) $\text{SP}^3 > \text{SP}^2 > \text{SP}$
c) $\text{SP}^2 > \text{SP} > \text{SP}^3$
d) All of these
- Which of the following compound is Aspirin?
a) Methyl Salicylate
b) Salicylic acid
c) Phenyl salicylate
d) Acetyl Salicylic acid
- Phenol reacts with excess bromine water to give
a) o-bromo phenol + p-bromo phenol
b) Bromobenzene
c) 2,4,6-tribromophenol
d) m-bromophenol
- Resorcinol on distillation with zinc dust gives
a) Benzene
b) Toluene
c) Bromo benzene
d) 2,4,6-tribromo phenol
- Ketones are prepared by oxidation of
a) Primary alcohol
b) Secondary alcohol
c) Tertiary alcohol
d) None of these
- Which of the following have the highest boiling point?
a) Methanal
b) Ethanal
c) Propanal
d) Butanal
- The hybridization of nitrogen in Amine is _____.
a) SP
b) SP^3
c) SP^2
d) SP^4
- Hinsberg reagent is _____.
a) Pd + BaSO_4
b) $\text{NH}_2\text{NH}_2 + \text{KOH}$
c) p- toluene sulphonic acid
d) Benzene sulfonic acid
- Amines are generally classified as
a) Strong acid
b) Strong base
c) Weak base
d) Weak acid

Q.2 Attempt any Ten. [20]

- Why acetic acid is a weaker acid than formic acid.
- Explain why HF have a higher boiling point than HCl.
- Define term Inductive effect.
- Write a reaction for indicating an acidity of phenol.
- "Boiling point of alcohol is higher than comparable ether and aldehyde", Explain.

①

(P.T.O)

- vi. "Lower aldehydes and ketones are appreciable soluble in water", Explain.
- vii. Nucleophilic addition to aldehydes and ketones can be catalysed by acid, Explain.
- viii. Aldehydes generally undergoes nucleophilic addition more readily than ketones: Explain.
- ix. Define the term "Cannizaro reaction".
- x. Write uses of Diazonium Salt.
- xi. Write a reaction for Hofmann elimination reaction.
- xii. Why aniline is a weaker base than ammonia ?

Q3a) What are Carbanions and Carbocations ? How they are generated ? Mention few reactions involving them. **[10]**

OR

Q.3a) Discuss 2-Chlorobutanoic acid is stronger acid than butanoic acid. **[5]**
b) Explain P-nitro phenol has higher melting point than o-nitro phenol. **[5]**

Q.4a) Write a note on: Oxymercuration- demercuration for preparation of alcohol. **[5]**
b) Discuss acid catalysed dehydration of alcohol. **[5]**

OR

Q.4a) Discuss the structure and physical properties of ethers. **[5]**
b) Write a note on: Williamson Synthesis of Ethers. **[5]**

Q.5a) Write a note on: Reimer Tieman Reaction. **[5]**
b) Discuss Aldol and cross-aldol condensation. **[5]**

OR

Q.5a) Write a note on: Hell-Volhard- Zelinsky reaction. **[5]**
b) Discuss Transesterification. **[5]**

Q.6a) List advantages of reductive amination over ammonolysis reaction. **[5]**
b) Discuss about Hinsberg Test. **[5]**

OR

Q.6a) Write notes on: i) P-bromo toluene from Toluene **[5]**
 ii) *m*- bromo phenol from nitrobenzene **[5]**

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 (2)