SEAT No._____ **No. of Printed Pages:** 2

[115]

Sardar Patel University

B. Sc. (Semester – III) Examination

Date: 01 - 01-2021, Friday Time: 2 :00 – 4 :00 pm

Industrial Chemistry

COURSE NO: US03CICH22 (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)

1. Phenol is used in ……..
   A. As moth repellent
   B. In alcoholic beverages
   C. As anesthetic
   D. In antiseptics
2. Which of the following compound is Aspirin?
   A. Methyl salicylate
   B. Salicylic acid
   C. Phenyl salicylate
   D. Acetyl salicylic acid
3. Sodium phenoxide reacts with CO_2 at 125°C under 5 atm pressure to give salicylic acid is known as …..
   A. Kolbe's reaction
   B. Perkins reaction
   C. Wurtz reaction
   D. HVZ reaction
4. Which of the following will have the highest boiling point?
   A. Methanal
   B. Ethanal
   C. Propanal
   D. Butanal
5. The melting points aldehydes and ketones tend to;
   A. Decrease with increase molecular weight
   B. Increase with increasing molecular weight
   C. Remain unchanged with increasing molecular weight
   D. Be unpredictable due to resonance
6. Which action best accounts for the solubility of aldehydes and ketones in water?
   A. Polar interactions between solute molecules
   B. H-bonding between solute molecules
   C. Van der waals forces
   D. H-bonding between solute and solvent molecules
7. Furan reacts with ammonia in the presence of alumina at 400°C to give
   A. Pyridine
   B. Furfural
   C. Pyrrole
   D. Furoic acid
8. Among following compounds, which is most basic?
   A. Pyridine
   B. Pyrrole
   C. Furan
   D. Thiophene
9. Naphthalene undergoes oxidation with Na7Cr707/ H, SO4 to form
   A. Phthalic acid
   B. Benzoic acid
   C. Tetralin
   D. Phenylacetic acid
10. All carbon atoms in Anthracene are…..
    A. sp hybridized
    B. sp^3 hybridized
    C. sp^2 hybridized
    D. None of these

Q.2 Answer the Following. (All are compulsory) (08)

1. Acid catalyzed hydrolysis of ethylene oxide yields CH_3CH_2OH. True / False?
2. The product of reaction of ethylene oxide with acidic methanol is $HOCH_2CH_2OH$. True / False?
3. Acetaldehyde on treatment with Tollen's reagent gives precipitate of AgNO3. True / False?
4. In succinic acid HOOC(CH2)nCOOH, where n is equal to 1. True / False?
5. Thiophene is five membered rings which is most resonance stabilized among others five-member heterocyclic ring of similar class. True / False?
6. 2,5-dibromothiophene is the main product when thiophene reacts with Br2 in benzene. True / False?
7. The Friedel–Crafts reaction of Naphthalene with Succinic anhydride using Nitrobenzene as a solvent give_____ as a main product.
8. A reaction of Anthracene with Acetyl chloride using AlCl3 and Nitrobenzene at lower temperature give_____ as a main product.

Q.3 Answer the following short questions (Attempt Any 10 out of 12) (20)

1. Write the reaction of alcohols with hydrogen halides.
2. Enlist various sources of Alcohols.
3. Write the classification and physical properties of Alcohols.
4. Why acid derivatives are hydrolyzed more readily in acidic or alkaline than neutral medium?
5. Enlist, various reactions for preparations of Aldehydes.
6. Write a reaction for preparation of acids Anhydrides.
7. Define term "Heterocyclic compound", write few examples of six members heterocyclic compounds.
8. Write synthesis of Pyrrole.
9. Write synthesis of Furan and Thiophene.
10. Write a reaction for "Nitration reaction in Naphthalene".
11. Write a reaction for "Friedel Crafts alkylation with C2H5I in presence of AlCl3".
12. Write a reaction for "Sulponation of Naphthalene with conc H2SO4 at 160 ^{0}C.

Q.4 Answer the following Long questions (Attempt Any 04) (32)

1. Write a note on the addition of Grignard reagent in carbonyl compound.
2. Discuss the reactions of Amine with nitrous acid.
3. Discuss the "Grignard synthesis of a carboxylic acid".
4. Discuss the "Malonic ester synthesis of carboxylic acid".
5. Discuss the structure of Pyrrole.
6. Discuss the "Electrophilic substitution" in Pyrrole.
7. Give Haworth's synthesis of Naphthalene.
8. Discuss the electrophilic aromatic substitution reaction Anthracene.

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