

[A-22]

SEAT No. _____

No. of Printed Pages : 3

SARDAR PATEL UNIVERSITY
THIRD SEMESTERY B.Sc. EXAMINATION – 2018. (NC)
COURSE NO: USO3CCHE01 (2010 Batch)
SUBJECT: ORGANIC CHEMISTRY.

DATE: 20/11/2018

TIME: 02:00 pm to 05:00pm

DAY: Tuesday

TOTAL MARKS: 70

Que: 1 Choose the correct option and rewrite the answer of the following. [10]

- Plane polarized light is affected by _____
(a) identical molecules (b) All polymers
(c) Chiral molecules (d) All bio molecules
- The bond angle between carbon atoms in cyclohexane is ____
(a) 109.28° (b) 60° (c) 120° (d) 90°
- In the manufacture of dynamite one of the chemicals used is ____
(a) Glycol triacetate (b) Glycol trinitrate
(c) Glycol (d) Glycol tri iodide
- Which of the following has the highest boiling point ?
(a) diethyl ether (b) n- butyraldehyde
(c) n- propyl chloride (d) n-butyl alcohol
- The carbon atom of carbonyl group is ____
(a) sp^2 hybridized (b) sp^3 Hybridized
(c) sp Hybridized (d) Non of these
- Acetone undergo reduction with Zn amalgam in HCl to form propane, this reaction known as ____
(a) Aldol condensation (b) Clemmensen reduction
(c) Rosenmund reduction (d) Wolf-kishner reduction
- Which of the compound is a secondary amine
(a) $CH_3-CH(NH_2)-CH_3$ (b) $CH_3-CH_2-NH_2-CH_3$
(c) $H_2N-CH_2CH_2-NH_2$ (d) $(CH_3)_3-N$
- Which of the following is not carboxylic acid
(a) Acetic acid (b) Adipic acid (c) Malonic acid (d) Picric acid
- Which of the following compound is more active ?
(a) Acetic acid (b) propanoic acid
(c) Butanoic acid (d) tri chloro acetic acid
- Phenol is acidic because of ____
(a) Resonance (b) peroxide effect
(c) electromeriv effect (d) Indective effect

Que: 2 Answer the following. [Attempt any six] [12]

- What is Flagpole interaction.
- Differentiate between Oxymercuration- demercuration and Hydroboration-oxidation
- Ethyl alcohol undergoes oxidation reaction easily but ter-butylalcohol does not.
- Draw structure of isomeric alcohol having molecular formula $C_4H_{10}O$, & give their IUPAC names.
- Aldehyde generally undergoes nucleophilic addition more readily than Ketone explain.

- 6 Explain α -chloro butyric acid is stronger acid than β - chloro butyric acid
 7 What is Kolbe reaction? Discuss your answer with illustration.
 8 Give the synthesis of m- Bromophenol from nitrobenzene.

Que: 3 Answer the following.

[08]

- (a) Draw Newman formula resulting from rotation about C_2-C_3 bond of n-butane through 60° . Name all the conformations and arrange them into increasing order of stability.
 (b) Define the following terms with suitable example.
 (i) Enantiomer (ii) Torsional strain.
 (iii) Conformation (iv) Specific rotation.

OR

Que: 3 Answer the following.

[08]

- (a) State and explain sequence rules with suitable examples.
 (b) What is 1,3-diaxial interaction? Why equatorial methyl cyclohexane is more stable than axial methyl cyclohexane.

Que: 4 Answer the following.

[08]

- (a) Discuss the mechanism for pinacol-pinacolone rearrangement.
 (b) Give the synthesis of Glycerol from propene via halohydrin formation.

OR

Que: 4 Answer the following.

[08]

- (a) Define Grignard reagent and its limitation and also write synthesis of sec-butyl alcohol from ethanol.
 (b) Alcohol act as a acid and base, explain

Que: 5 Answer the following.

[08]

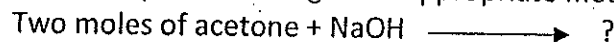
- (a) What is hemiacetal? Give detail stepwise mechanism for the Acetal formation.
 (b) Write reaction mechanism for acid catalyzed halogenations of ketone.

OR

Que: 5 Answer the following.

[08]

- (a) Give the reaction mechanism for witting reaction and write synthesis of styrene from benzaldehyde and ylide.
 (b) Predict the product and give its appropriate mechanism of the followin.



Que: 6 Answer the following.

[08]

- (a) Draw the structure of all isomeric amine having molecular formula $C_4H_{11}N$. Classify them 1° , 2° , & 3° amine and write their IUPAC names.
 (b) Aromatic amines are weaker base than aliphatic amine, Explain.

OR

Que: 6 Answer the following.

[08]

- (a) Describe the action of nitrous acid on 1° , 2° , and 3° amine as well as aromatic amines.
 (b) Give a brief account on " Hinsberg's test "

Que: 7 Answer the following. [08]

- (a) Arrange the acidity order of following compounds and give detail explanation for your answer.
(1) Formic acid (2) Acetic acid (3) Chloroacetic acid
- (b) Give all steps involved in synthesis of α -methyl butyric acid from Malonic ester.

OR

Que: 7 Answer the following. [08]

- (a) Give the synthesis of citric acid from Glycerol.
- (b) What is transesterification? Give mechanism of acid catalyzed transesterification.

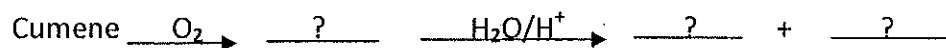
Que: 8 Answer the following. [08]

- (a) Phenol are more acidic than alcohol, explain.
- (b) Write reaction mechanism of Fries rearrangement.

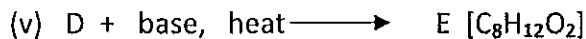
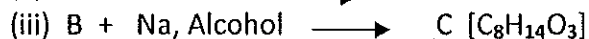
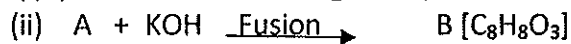
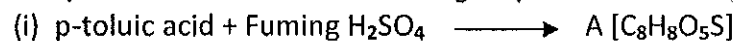
OR

Que: 8 Answer the following. [08]

- (a) Complete and rewrite the following reaction and write appropriate mechanism involved in it.



- (b) Complete and rewrite the following steps.



— X —

