SEMESTER V (2025-26)
ORGANIC CHEMISTRY ASSIGNMENT

- **All questions are mandatory**
- **Write reactions/mechanism/examples wherever required.**
- **Write on fair register**
- **Submission Date: 07/11/2025 (Friday)**

Q1. Write Short note on following:-

a. H-bonding in alcohols & Phenols.
b. Acidic nature of alcohols & Phenols.
c. Distinction b/w 1°, 2° & 3° alcohols.
d. Effect of substitution on acidic strength of Alcohol & Phenols.
e. Rancidity.
f. Trans Esterification.
g. Saponification - value.
h. Iodine number.
i. Reichert-Meissel value.
j. Cleansing action of soap.
k. Distinction b/w soap & synthetic detergents.
l. Zwitter ion.
m. Electrophoresis.
n. Isoelectric Point.
o. Denaturation & Renaturation of Protein.
p. Colour Test of Proteins.
q. Hydrogenation of Fats & Oils.

Q2. Write following Name Reactions with mechanism.

a. Fries Rearrangement
b. Kolbe's reaction
c. Claisen Rearrangement
d. Gattermann synthesis
e. Houben-Hoesch Reaction
f. Reimer-Tiemann Reaction
g. Aldol Condensation
h. Benzoin Condensation
i. Perkin reaction
j. Knoevenagel condensation
k. Baeyer-Villiger oxidation

l. Cannizaro & Crossed Cannizaro
m. MPV reduction
n. Wolf-Kishner Reaction
o. Clemmensen Reduction
p. Reformatsky reaction
q. Gattermann Koch reaction
r. Gabriel-Phthalimide reaction
s. Hoffmann Bromamide reaction
t. Pinacole-Pinacolone Rearrangement

Q3. What are proteins? Discuss the structure of proteins in detail.
Q4. Discuss about solid phase peptide synthesis.
Q5. Explain geometry of peptide linkage. Discuss about end-group analysis.
Q6. What are α-amino acids? Write their preparation, methods & chemical reactions.
Q7. What are Amines? Write their classification, structure, Stereochemistry & separation methods.
Q8. What are carbonyl compounds? Discuss Nucleophilic Addition reactions given by aliphatic as well as aromatic carbonyl compounds.
Q9. What are oils & fats? Discuss their differences & general chemical properties.
Q10. Explain with mechanism about oxidative cleavage of alcohols with reference to $[Pb(OAc)_4]$ & HIO_4
Q11. What are and How will you prepare carbonyl compounds using Grignard reagent.
Q12. Write following reactions:

a. Glycerol with Limited amount of HI
b. Glycerol with Excess of HI
c. Glycerol with $KHSO_4$
d. Glycerol with Oxalic acid at 383 K and 503 K
e. Glycerol with PCl_5
f. Glycerol with HIO_4