

Core Paper-VI----Organic Chemistry-II-----Question Bank

1. State whether TRUE or FALSE. If False then write the correct statement.

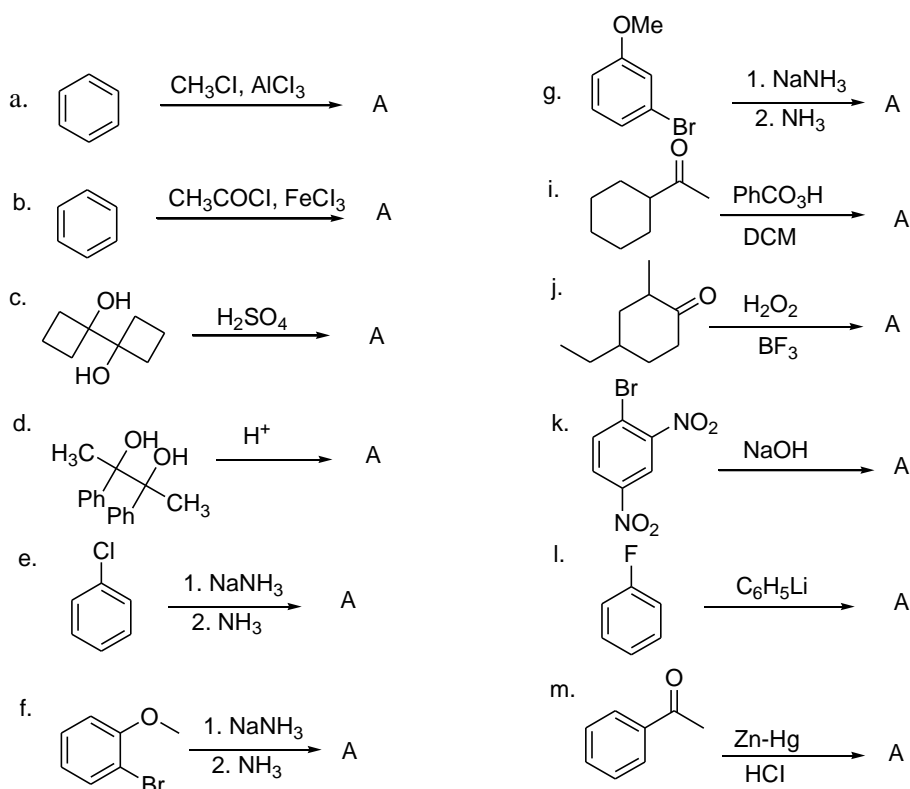
(Each Q. carry 1 Mark)

- I. S_N1 reaction follow second order kinetics.
- II. Bulky base favour E2 over S_N2 .
- III. In S_N2 inversion product forms.
- IV. In S_N2 both inversion and retention product forms.
- V. In S_N2 reaction carbocation intermediate takes place.
- VI. Polar solvents favours S_N1 and E1 reactions.
- VII. Beckmann rearrangement takes place in presence of base.
- VIII. Ethyl aceto-acetate is more reactive due to presence of active methylene group.
- IX. In Wittig reaction E-alkene is formed if polar solvent is used.
- X. In Cannizzaro reaction the carbonyl molecule contains the α -hydrogen.
- XI. In Aldol condensation α -hydroxy ketone product forms.
- XII. In Michael addition reaction the nucleophile (Michael donor) is an active methylene group.
- XIII. Claisen condensation is known as di-ester condensation reaction.
- XIV. In Hoffmann Degradation reaction amide to carboxylic acid formation takes place.
- XV. Presence of EWG group favours electrophilic aromatic substitution.
- XVI. Nucleophilic aromatic substitution is a type of addition-elimination reaction.
- XVII. Elimination-addition type reaction proceeds through benzyne mechanism.
- XVIII. In Curtius rearrangement Isocyanate Intermediate takes place.
- XIX. More the electron donating group, less the migratory aptitude in pinacol-pinacolone rearrangement.
- XX. Michael addition is a 1,4-addition reaction.

2. Explain following name reactions with Mechanism. (Each Q.- 1.5 marks)

- I. What is Friedal craft acylation?
- II. What is Friedal craft alkylation?
- III. What is Clemmenson reduction?
- IV. What is Wolf-kishner reduction?
- V. What is keto-enol tautomerism?
- VI. What is Riemer-tiemann reaction?
- VII. What is aldol Condensation?
- VIII. What is Cannizzaro reaction?
- IX. What is Benzoin condensation?
- X. What is Knoevenagal condensation?
- XI. What is Dieckmann reaction?
- XII. What is Kolbe's Schmidt reaction?

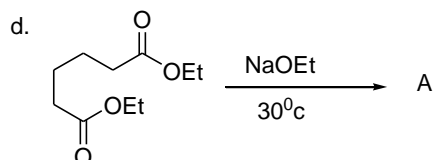
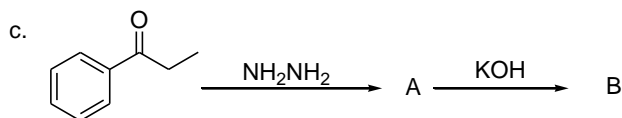
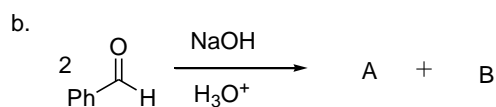
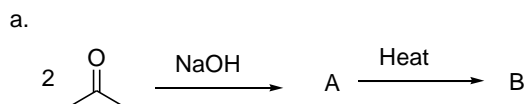
3. Write the Product A of the following reactions. (Each Q. carry 1.5 marks)

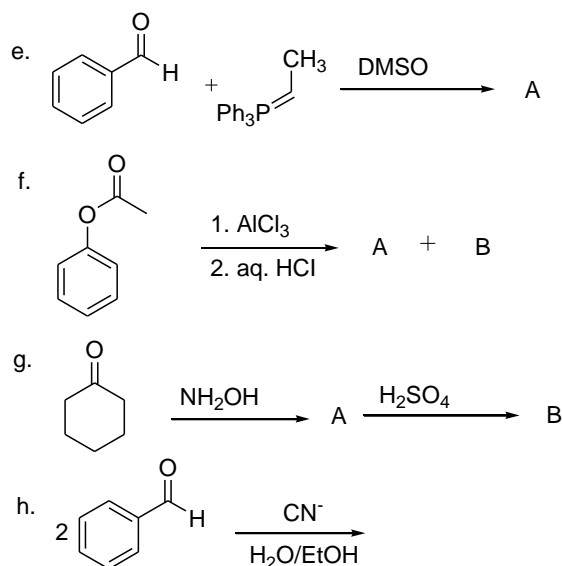


4. Explain the following. (Each Q. carry 2 marks)

- I. How will you synthesize n-propyl bromide from n-propyl alcohol?
- II. What are the major differences between S_N1 and S_N2 reactions?
- III. What is S_{Ni} reaction? Give an example?
- IV. What is E_1Cb reaction? Give an example?
- V. What are the differences between $E1$ and S_N1 reactions?
- VI. Write the differences between $E2$ and S_N2 type reactions?
- VII. What is the effect of solvent in S_N1 and S_N2 reactions?
- VIII. Define acidity of phenol. Between phenol and phenoxide ion which is more acidic?
- IX. What will happen if we oxidise primary, secondary and tertiary alcohol?
- X. Write one method of preparation of Ethyl acetoacetate?
- XI. What is Bayer-Villiger Oxidation?
- XII. What is Fries Rearrangement?

5. Write the products A, B of the following reactions? (Each Q. carry 2 marks)





6. Explain the following. (Each Q. carry 7 marks)

- Arrange the below bracketed compounds in order of decreasing reactivity in S_N1 , S_N2 , E1 and E2 reactions and explain the reason? (ethyl bromide, Isopropyl bromide, n-propyl bromide, t-butyl bromide)
- What is Pinacol-Pinacolone rearrangement? Explain the mechanism by taking an example. What are the factors affecting the migrating group aptitude? What would be the stereochemistry of the migratory group?
- What are the differences between S_N1 and S_N2 reactions? Describe the effect of solvent, nucleophile types and draw the energy profile diagram for both?
- Write the differences among E1, E2, E1Cb type reactions by taking suitable example for each?
- What is Beckmann rearrangement? Explain the mechanism with an example.
- What is Hoffmann Bromamide reaction? Explain the mechanism and write the intermediate compound in this reaction.
- What is witting reaction? How to prepare the Ylide for this reaction? Write the mechanism of this reaction.

7. What is A, B and C in the following reactions? (Each Q. Carry 7 marks)

