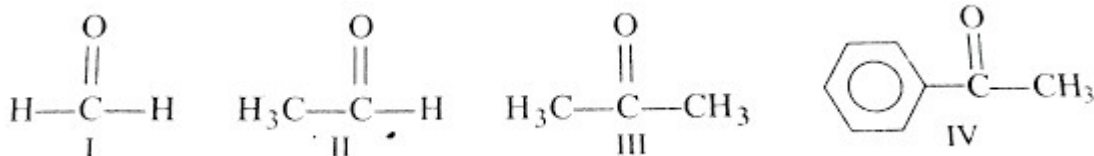


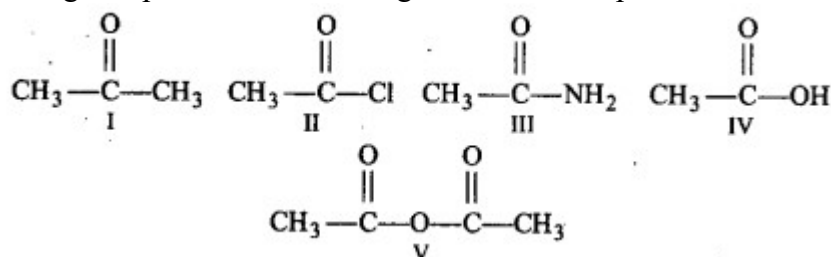
TOPIC: CARBONYL COMPOUNDS

DPP

1. Arrange the following compounds in decreasing order of nucleophilic addition reaction



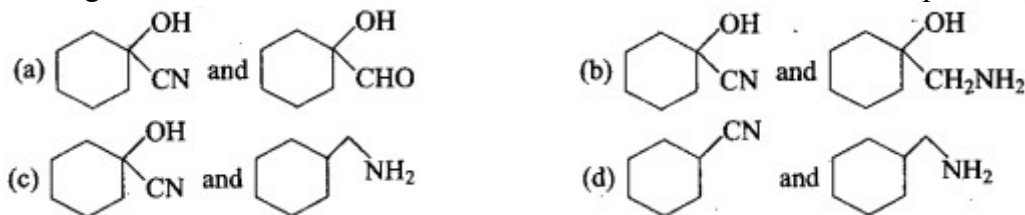
- 1) II > IV > III > I 2) I > II > III > IV 3) IV > III > II > I 4) II > III > IV > I
2. Arrange the following compounds in decreasing order of nucleophilic addition reaction



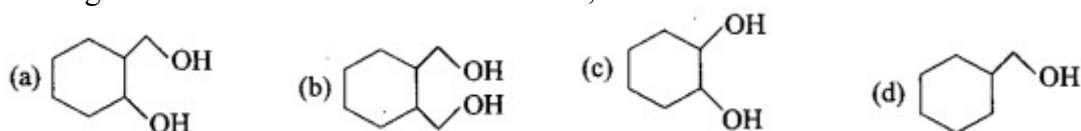
- 1) II > V > I > IV > III 2) III > IV > I > V > II 3) II > I > V > III > IV 4) IV > III > V > I > II
3. In the given reaction sequence $\text{C}_6\text{H}_5\text{CHO} \xrightarrow[\text{H}^+]{\text{H}_2\text{N}-\text{OH}} \text{A} \xrightarrow{\text{P}_2\text{O}_5} \text{B}$, A and B respectively are

- 1) $\text{C}_6\text{H}_5-\text{CH}=\text{N}-\text{OH}$, $\text{C}_6\text{H}_5\text{CN}$ 2) $\text{C}_6\text{H}_5-\text{CH}=\text{N}-\text{OH}$, $\text{C}_6\text{H}_5\text{C}-\text{NH}_2$
 3) $\text{C}_6\text{H}_5-\text{CH}=\text{N}-\text{OH}$, $\text{C}_6\text{H}_5\text{CHO}$ 4) $\text{C}_6\text{H}_5-\text{CH}=\text{N}-\text{OH}$, $\text{C}_6\text{H}_5-\text{COOH}$

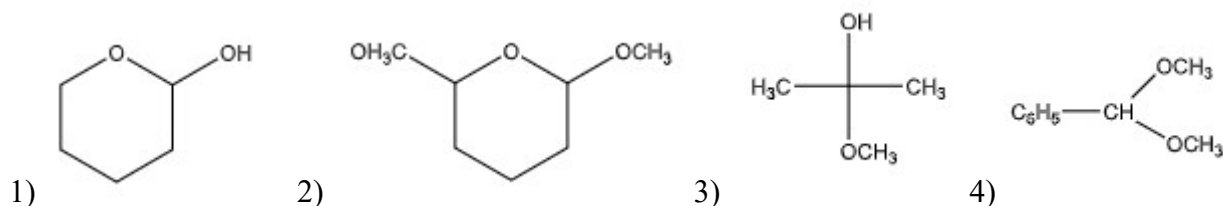
4. In the given reaction $\text{Cyclohexanone} \xrightarrow{\text{HCN}} \text{A} \xrightarrow[\text{H}_2\text{O}]{\text{LiAlH}_4} \text{B}$, A and B will respectively be:

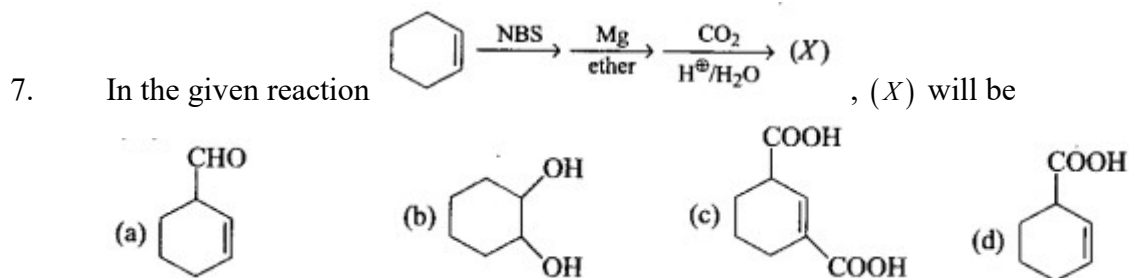


5. In the given reaction $\text{Cyclohexene} \xrightarrow[2. \text{H}_2\text{O}]{1. \text{HCHO}/\text{H}^+} \text{X}$, X is

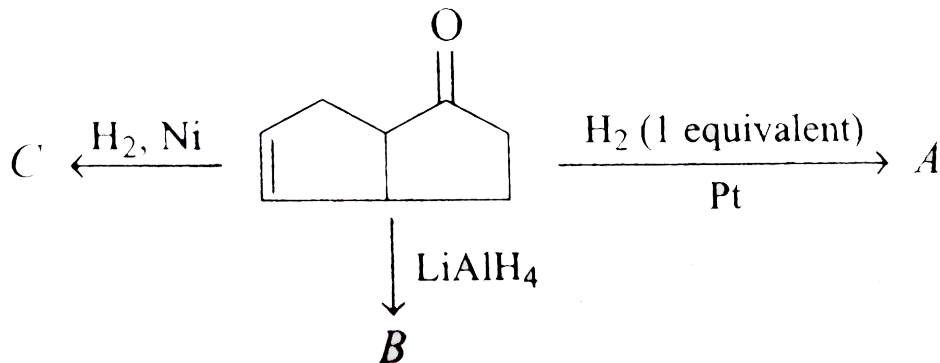


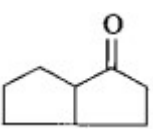
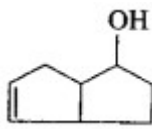
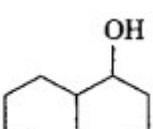
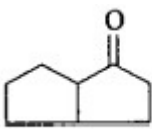
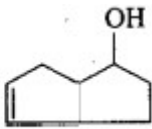
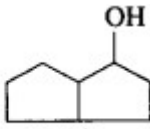
6. Which of the following structures contains a hemiacetal group?

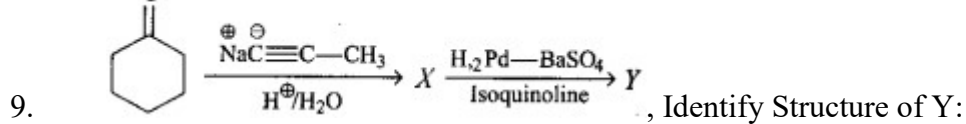




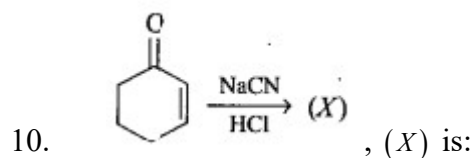
8. What are A, B and C in the given reaction?

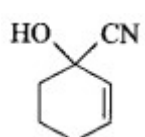
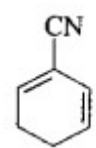
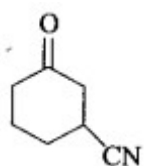
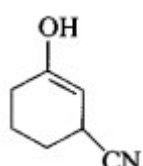


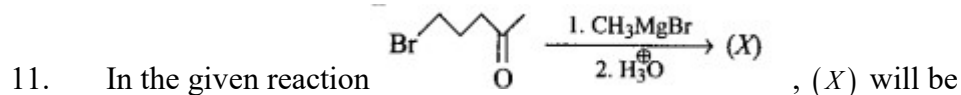
- 1)  in all cases
- 2)  in all cases
- 3)  in all cases
- 4)  (A)  (B) and  (C)



- 1) 
- 2) 
- 3) 
- 4) 

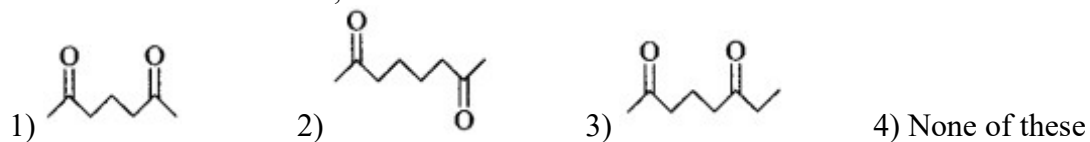
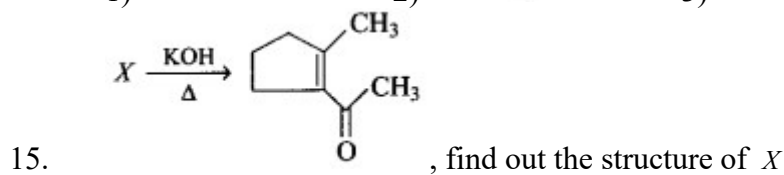
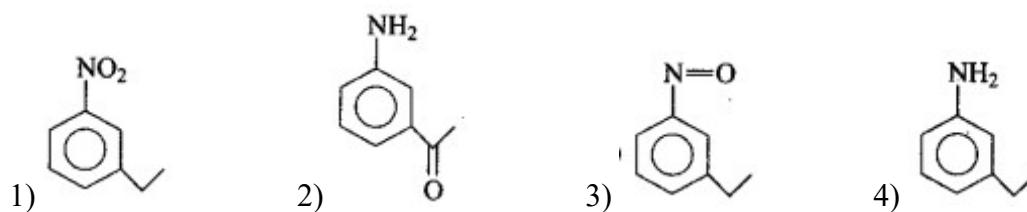
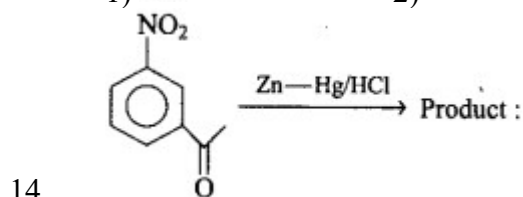
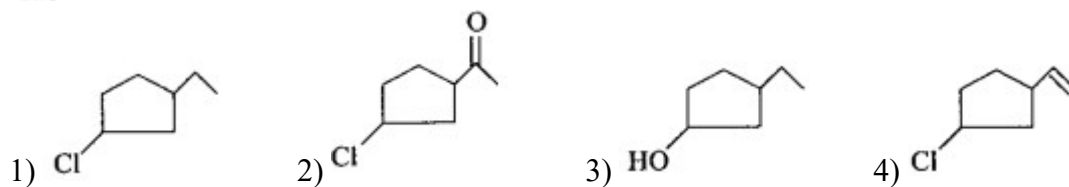
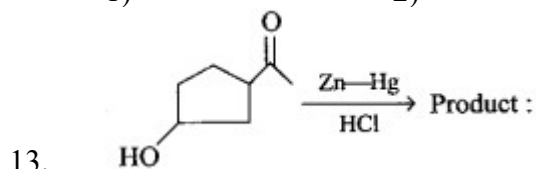
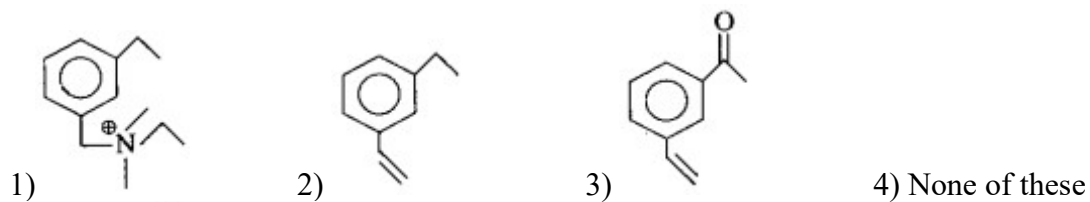
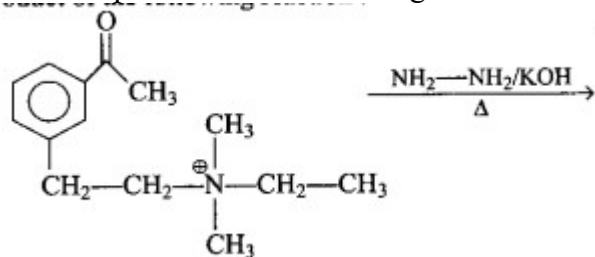


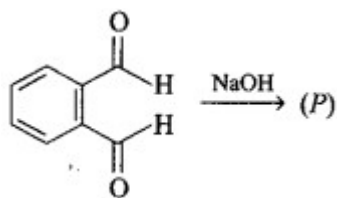
- 1)  2)  3)  4) 



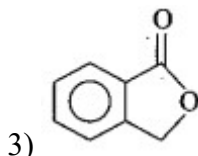
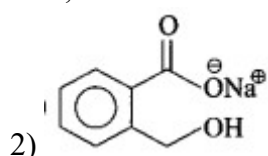
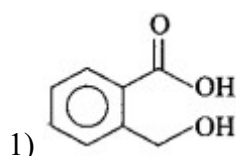


12. Find the product of the following reactions:



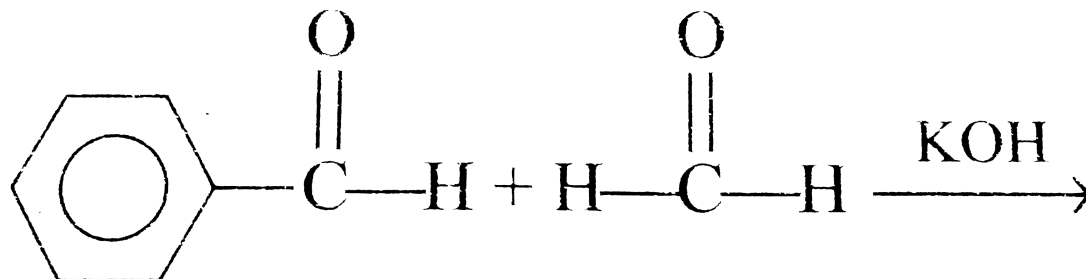


16. , P will be



4) None of these

17. Find out no. of products produced in following reaction:



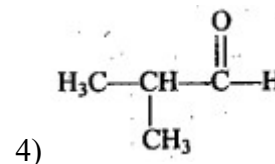
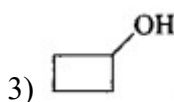
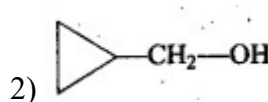
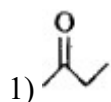
1) 1

2) 4

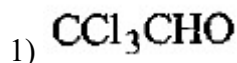
3) 3

4) 2

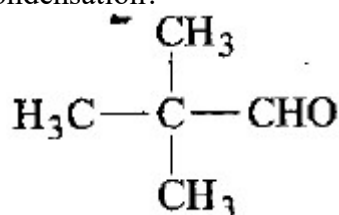
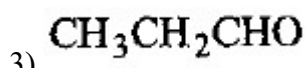
18. Compound 'X' $\text{C}_4\text{H}_8\text{O}$ which gives 2, 4-DNP derivative and negative iodoform test is:

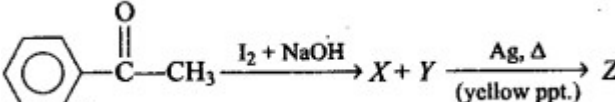


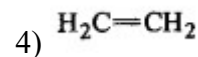
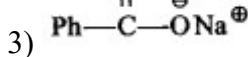
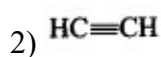
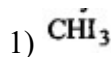
19. Which of the following would undergo aldol condensation?

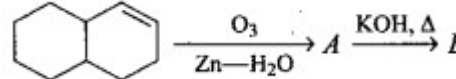


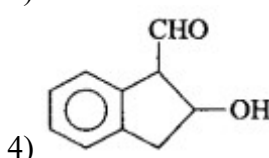
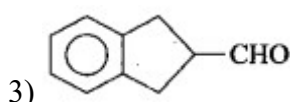
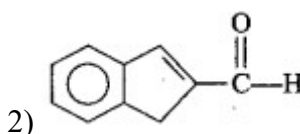
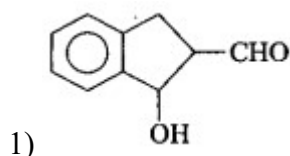
2)

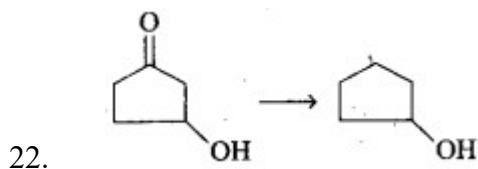


20.  , identify final product 'Z'



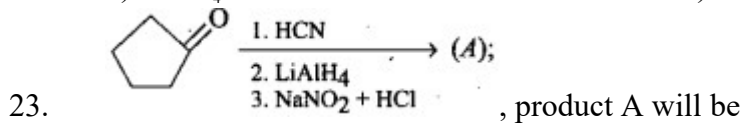
21.  , compound B is:

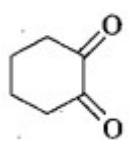
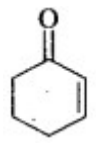
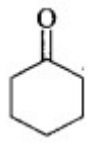


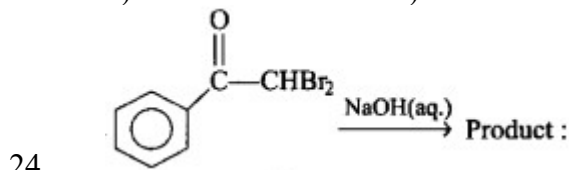


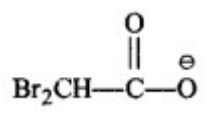
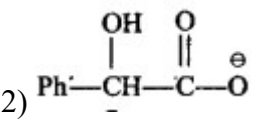
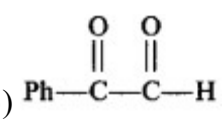
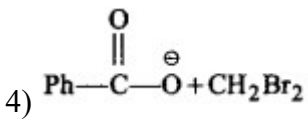
Above conversion can be achieved by

- 1) Wolff-Kishner reduction
- 2) Clemmensen reduction
- 3) LiAlH_4
- 4) NaBH_4

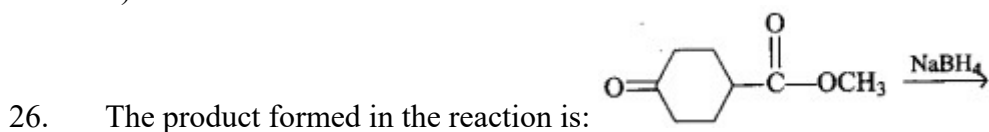
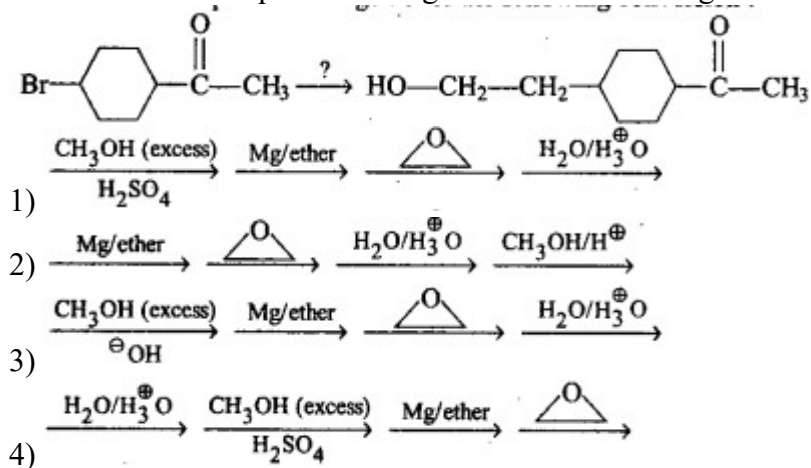


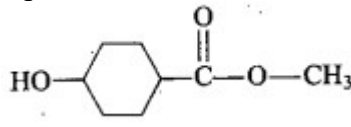
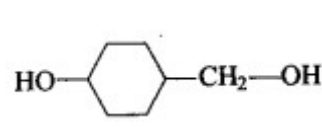
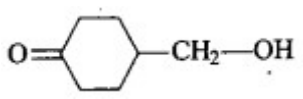
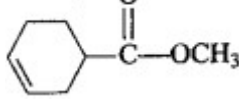
- 1) 
- 2) 
- 3) 
- 4) None of these



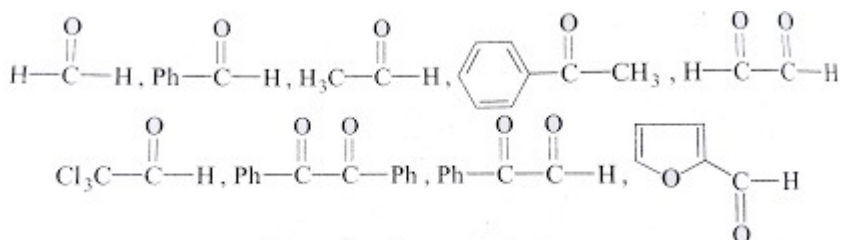
- 1) 
- 2) 
- 3) 
- 4) 

25. Give the correct sequence of reagents for the following conversion

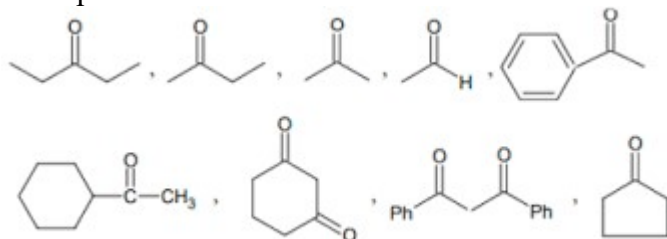


- 1) 
- 2) 
- 3) 
- 4) 

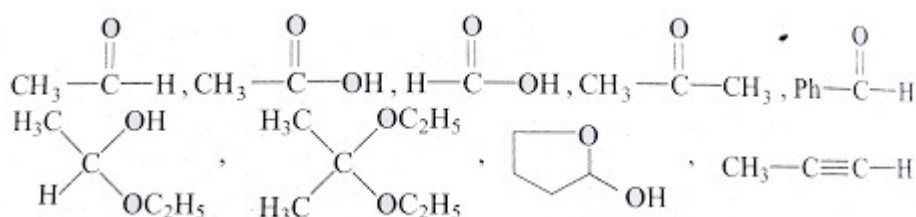
27. Find out number of substrates those cannot undergo Cannizzaro's reaction.



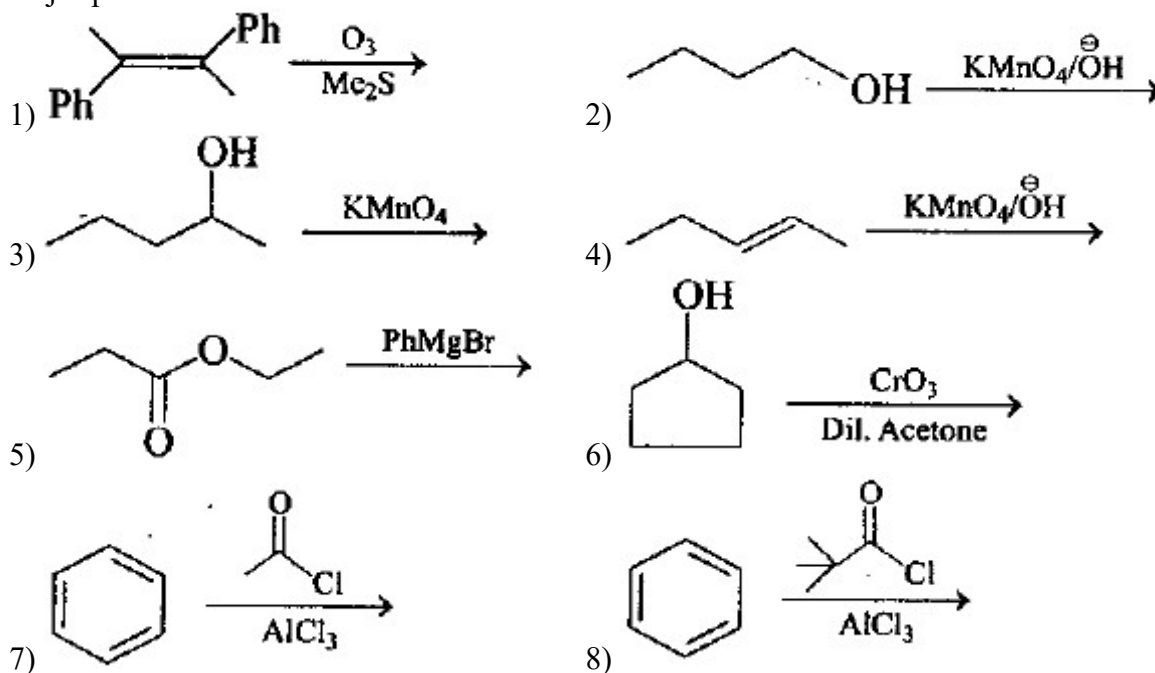
28. Examine the structural formulas of compounds given below and identify number of compounds which show positive iodoform test.



29. Of the following compounds, how many would give positive test with Tollen's reagent?



30. Consider the following reactions and identify how many reactions can give carbonyl compounds as major product.



CHEMISTRY

1-10	2	1	1	2	1	1	4	4	1	4
11-20	3	2	1	1	2	3	2	4	3	2
21-30	2	1	3	2	3	1	5	6	6	5

HINTS

1. Nucleophilic addition reaction of carbonyl group directly proportional to electron withdrawing group on carbonyl carbon
2. better leaving group favour to the nucleophilic addition reaction
Better leaving group to be weak base.
3. $CHO \xrightarrow{NH_2OH} CH=N-OH \rightarrow CN$
4. step-1: gives cynohydrine
In that cynohydrine, CN group reduces to primary amine. (CH_2NH_2)
5. Formaldehyde react with acid gives carbo cation. (CH_2OH^+), carbocation is the electrophile.
6. Aldehydes are react with mono hydric alcohols gives hemiacetol. Hemiacetol containing OH and OR on same carbon. Ketones are react with dihydric alcohols gives cyclic ketal
7. Bromination carry at allyl position. Allyl bromides is converted to Grignard reagent. Grignard reagent react with CO_2 followed by acid hydrolysis. Gives carboxylic acid.
8. for the A, hydrogenation carry at double bond. For the B, $LiAlH_4$ unable to reduce $C=C$, for the C, Hydrogenation carry at $C=C$ and Carbonyl. Order of the hydrogenation, alkyne > alkene > Carbonyl group.
9. step-1: nucleophilic addition reaction. Propynlide attacking at carbonyl carbon, carbonyl oxygen convert into the alcohol.
Step-2: $C \equiv C$ undergo mild reduction with lindar catalyst gives cis alkene.
10. Conceptual
11. Ketones are react with gridnard reagent followed by acid hydrolysis gives tert-alcohol. An alcohol react with bromide ion loss HBr
12. Wolf Kishner reduction carbonyl is reduced to CH_2 including carry the dehydro halogenation and Hoffman elimination.
13. In Clemennson reduction, carbonyl reduces to CH_2 , including OH is replaced by Cl and NO_2 reduces to NH_2
14. In Clemennson reduction, carbonyl reduces to CH_2 , including OH is replaced by Cl and NO_2 reduces to NH_2
15. Intra aldol condensation carbonyl group is reacted with α - hydrogens
16. Intra molecular cannizaros
17. cannizaro and intra molecular cannizaro reaction
18. aceto group containing carbonyl compounds can give both iodoform and 2,4 DNP test
19. α - hydrogen containing aldehydes and ketones involve aldol condensation.
20. aceto group containing carbonyl compounds can gives iodoform. Iodoform react with silver gives acetylene.
21. intra molecular aldol condensation

22. Wolf Kishner reduction carbonyl is reduced to CH_2 including carry the dehydro halogenation and Hoffman elimination
23. Conceptual
24. Intra molecular cannizaro
25. Conceptual
26. Conceptual
27. Without α – hydrogen containing aldehydes are involve in cannizaro
28. aceto group containing carbonyl compounds can gives haloform.
29. Aliphatic and aromatic aldehydes involve Tollen's reaction.
30. Conceptual