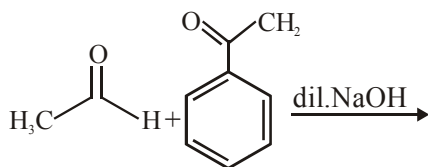


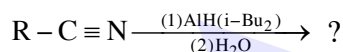
CARBONYL COMPOUND

1. The major product formed in the following reaction is:



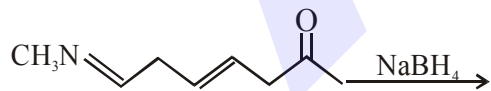
- (1)
- (2)
- (3)
- (4)

2. The major product of following reaction is :



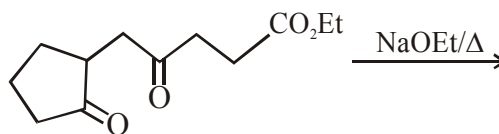
- (1) RCHO
- (2) RCOOH
- (3) RCH₂NH₂
- (4) RCONH₂

3. The major product of the following reaction is:



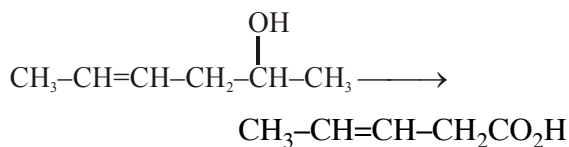
- (1)
- (2)
- (3)
- (4)

4. The major product obtained in the following reaction is :



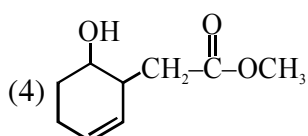
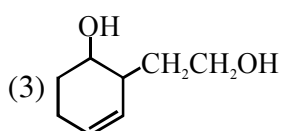
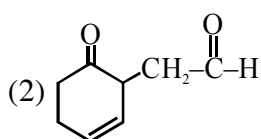
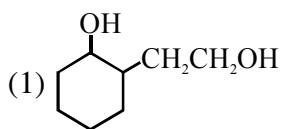
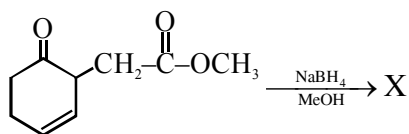
- (1)
- (2)
- (3)
- (4)

5. Which is the most suitable reagent for the following transformation ?

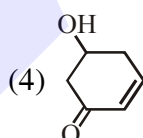
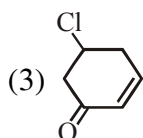
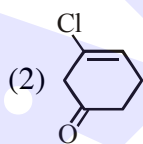
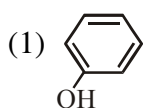
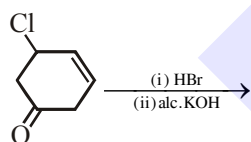


- (1) alkaline KMnO₄
- (2) I₂/NaOH
- (3) Tollen's reagent
- (4) CrO₂/CS₂

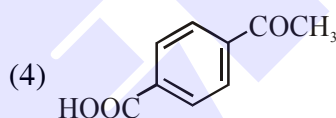
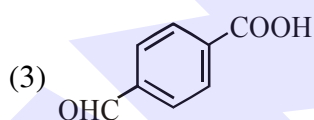
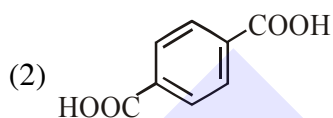
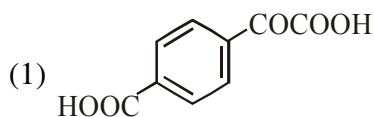
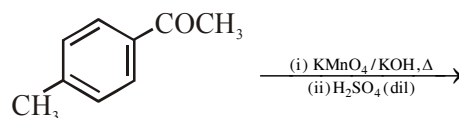
6. The major product 'X' formed in the following reaction is :



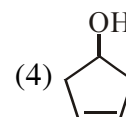
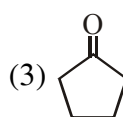
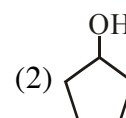
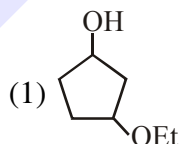
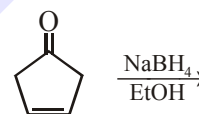
7. The major product of the following reaction is:



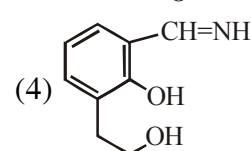
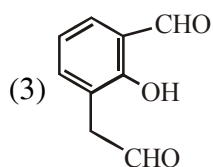
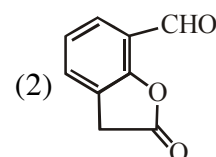
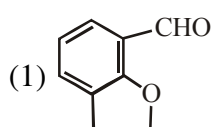
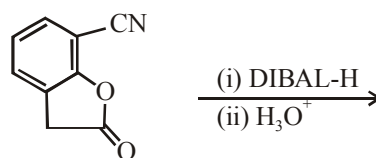
8. The major product of the following reaction is :



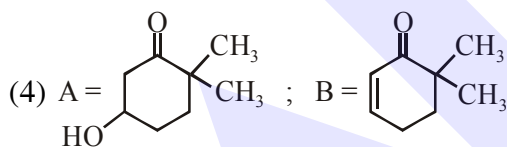
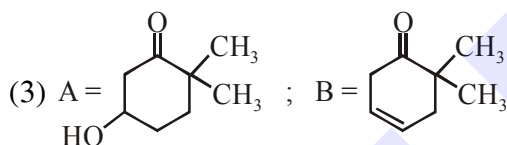
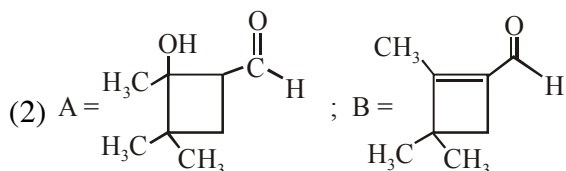
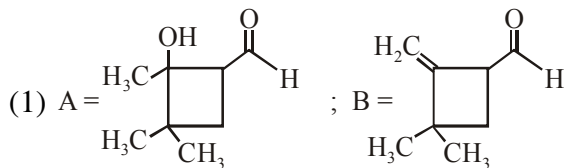
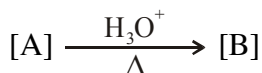
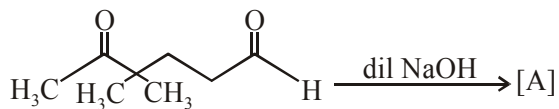
9. The major product of the following reaction is:



10. The major product of the following reaction is:



11. In the following reactions, products A and B are :



12. In the following reaction



Aldehyde Alcohol

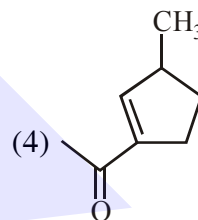
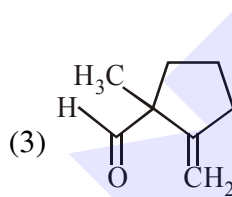
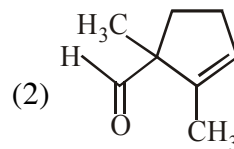
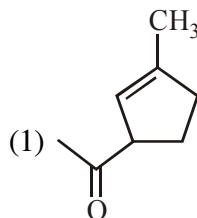
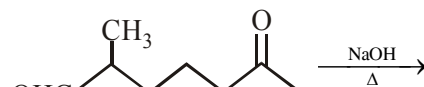
HCHO ^tBuOH

CH₃CHO MeOH

The best combinations is :

- (1) HCHO and MeOH
- (2) HCHO and ^tBuOH
- (3) CH₃CHO and MeOH
- (4) CH₃CHO and ^tBuOH

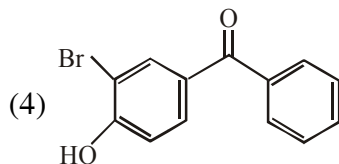
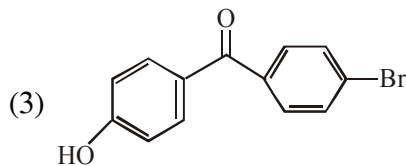
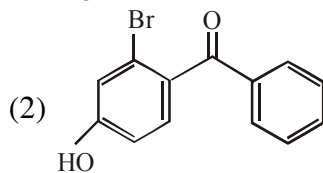
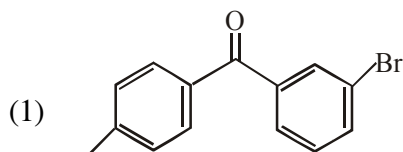
13. The major product obtained in the following reaction is



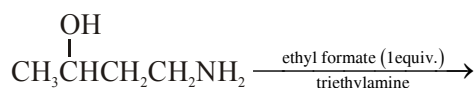
14. In the following reaction
carbonyl compound + MeOH $\xrightleftharpoons{\text{HCl}}$ acetal
Rate of the reaction is the highest for :

- (1) Acetone as substrate and methanol in stoichiometric amount
- (2) Propanal as substrate and methanol in stoichiometric amount.
- (3) Acetone as substrate and methanol in excess
- (4) Propanal as substrate and methanol in excess

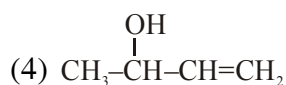
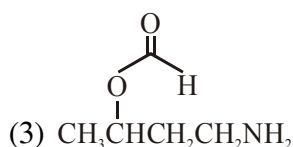
15. p-Hydroxybenzophenone upon reaction with bromine in carbon tetrachloride gives:



16. The major product of the following reaction is :



- (1) $\text{CH}_3\overset{\text{OH}}{\text{C}}\text{HCH}_2\text{CH}_2\text{NHCHO}$
 (2) $\text{CH}_3\text{CH}=\text{CH}-\text{CH}_2\text{NH}_2$

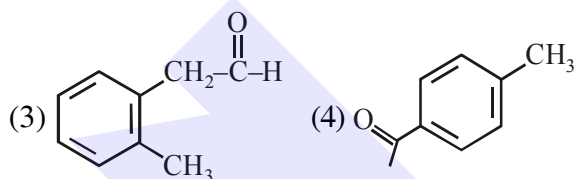
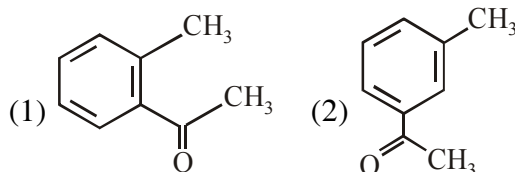


17. Major products of the following reaction are :

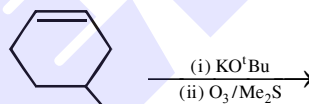


- (1) CH_3OH and HCO_2H
 (2) $\text{C}_6\text{H}_5\text{CH}_2\text{OH}$ and $\text{C}_6\text{H}_5\text{COOH}$
 (3) CH_3OH and $\text{C}_6\text{H}_5\text{COOH}$
 (4) HCOOH and $\text{C}_6\text{H}_5\text{CH}_2\text{OH}$

18. Compound A ($\text{C}_9\text{H}_{10}\text{O}$) shows positive iodoform test. Oxidation of A with KMnO_4/KOH gives acid B ($\text{C}_8\text{H}_6\text{O}_4$). Anhydride of B is used for the preparation of phenolphthalein. Compound A is :-



19. The major product(s) obtained in the following reaction is/are :

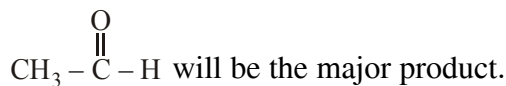


- (1) $\text{OHC}-\text{CH}_2-\text{CH}_2-\text{CH}=\text{CH}-\text{CHO}$
 (2) $\text{OHC}-\text{CH}_2-\text{CH}_2-\text{CHO}$ and $\text{OHC}-\text{CHO}$
 (3) $\text{OHC}-\text{CH}_2-\text{CH}(\text{O}^t\text{Bu})-\text{CH}_2-\text{CHO}$
 (4) $\text{OHC}-\text{CH}_2-\text{CHO}$

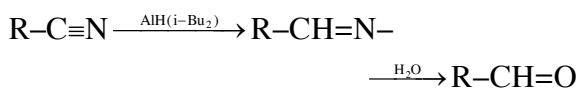
SOLUTION

1. **Ans. (1)**

Aldehyde reacts at a faster rate than keton during aldol and sterically less hindered anion will be a better nucleophile so self aldol at



2. **Ans. (1)**



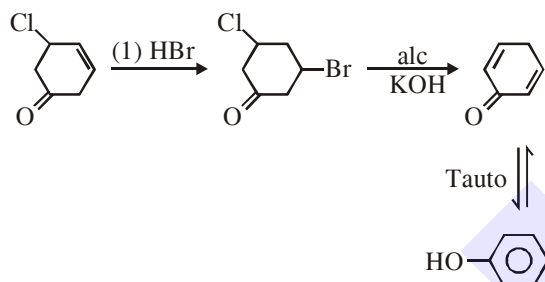
3. **Ans.(3)**

4. **Ans.(4)**

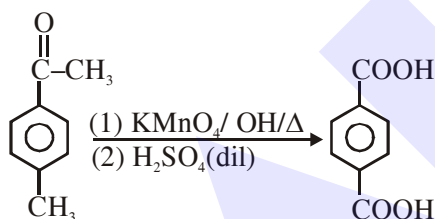
5. **Ans.(2)**

6. **Ans.(4)**

7. **Ans. (1)**

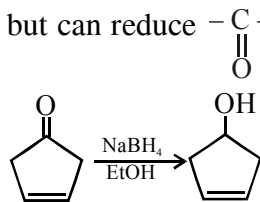


8. **Ans. (2)**

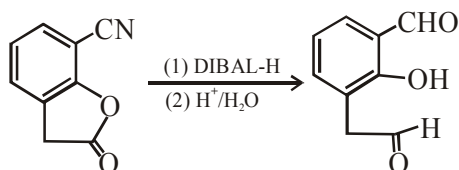


9. **Ans. (4)**

NaBH_4 can not reduce $\text{C}=\text{C}$ but can reduce $-\overset{\text{O}}{\parallel}{\text{C}}-$ into OH .

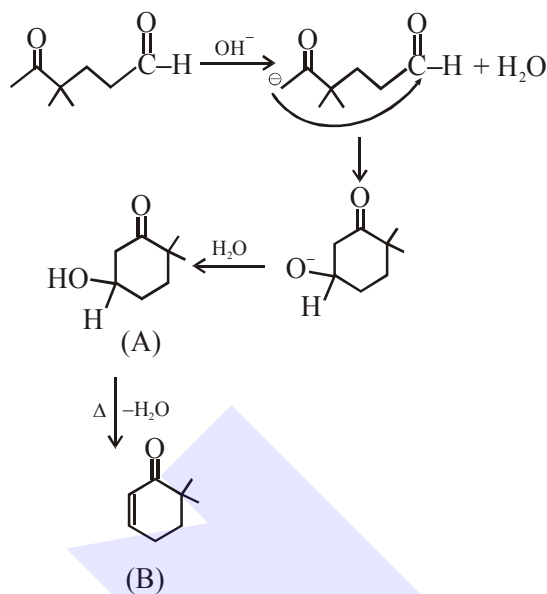


10. **Ans. (3)**

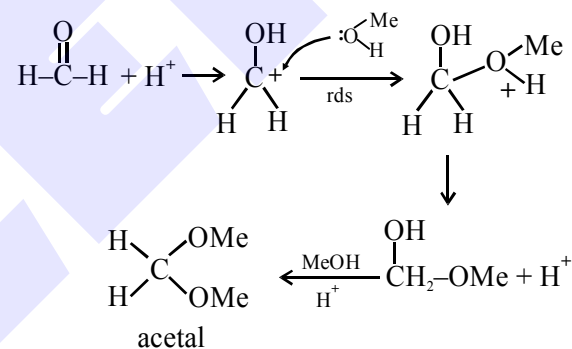


DIBAL-H will reduce cyanides & esters to aldehydes.

11. **Ans. (4)**



12. **Ans. (1)**

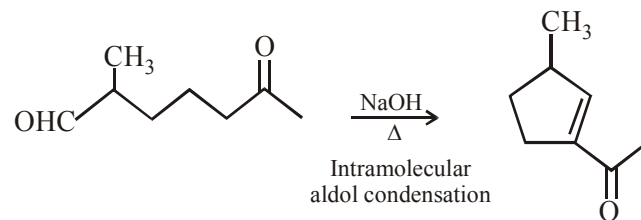


$$\text{rate} \propto \frac{1}{\text{steric crowding of aldehyde}}$$

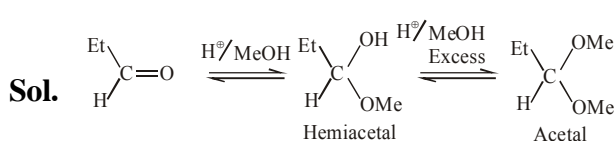
t-butanol can show formation of carbocation in acidic medium.

13. **Ans. (4)**

Sol.

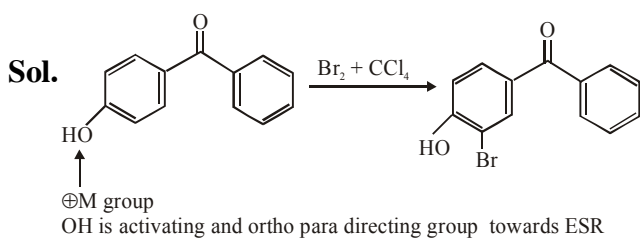


14. **Ans. (4)**

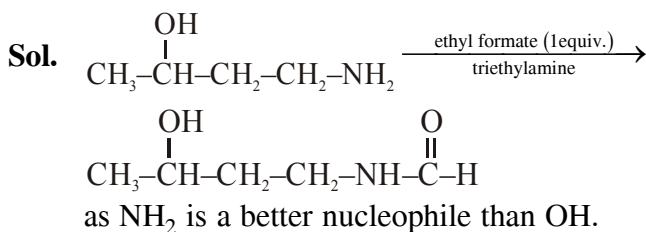


Acetone as substrate is less reactive than propanal towards nucleophilic addition.

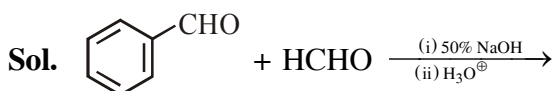
15. Ans. (4)



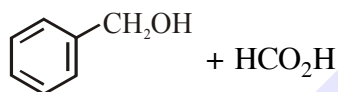
16. Ans. (1)



17. Ans. (4)

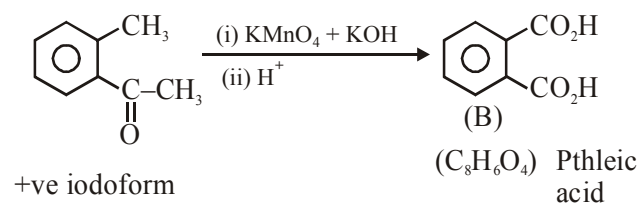


This is cross cannizaro reaction so more reactive carbonyl compound is oxidized and less reactive is reduced so answer is

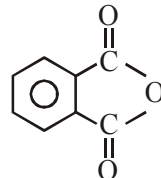


18. Ans. (1)

Sol.



+ve iodoform test



is used for preparation of phenolphthalein indicator

Pthleic anhydride

19. Ans. (2)

