



CHEMISTRY

NCERT - FULL MARKS CHEMISTRY(TAMIL)

CARBONYL COMPOUNDS

Self Evaluation A Choose The Correct Answer

1. The chain isomer of 2-methyl propanal is

- A. 2-butanone
- B. butanal
- C. 2-methyl propanol
- D. but-3-ene-2-ol

Answer:

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2. Schiff's reagent gives pink colour with

- A. acetone
- B. acetaldehyde
- C. ethyl alcohol
- D. methyl acetate

Answer:

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3. Isopropyl alcohol vapours react with air over silver catalyst at 520 K give

- A. tert.butyl alcohol
- B. acetaldehyde

C. acetone

D. 2-propanol

Answer:

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4. Methyl ketones are usually characterised by

A. the Fehling's solution

B. the iodoform test

C. the Schiff's test

D. the Tollen's reagent

Answer:

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5. Which of the following compound is oxidised to give ethyl methyl ketone?

- A. 2-propanol
- B. 2-pentanone
- C. 1-butanol
- D. 2-butanol

Answer:



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6. Formaldehyde polymerises to give

- A. paraldehyde
- B. paraformaldehyde
- C. formalin

D. formic acid

Answer:

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7. When acetaldehyde is heated with Fehling solution, it gives a precipitate of

A. Cu_2O

B. CuO

C. $CuO + Cu_2O$

D. Cu

Answer:

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8. The compound that does not undergo Cannizaro reaction is:

- A. formaldehyde
- B. benzaldehyde
- C. acetaldehyde
- D. trimethyl acetaldehyde

Answer:



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9. The formation of cyanohydrin from a ketone is an example of

- A. electrophilic addition
- B. nucleophilic addition
- C. nucleophilic substitution
- D. electrophilic substitution

Answer:

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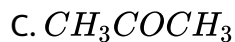
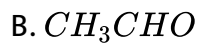
10. Hydrogenation of benzoyl chloride in the presence of Pd on $BaSO_4$ gives

- A. phenol
- B. benzoic acid
- C. benzyl alcohol
- D. benzaldehyde

Answer:

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11. From which of the following, tertiary butyl alcohol is obtained by the action of methyl magnesium iodide?

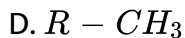
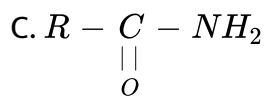
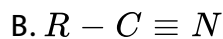
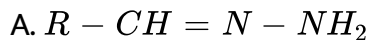


Answer:



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12. During reduction of aldehydes with hydrazine and C_2H_5ONa the product formed is



Answer:



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13. Aldol is

- A. 2-hydroxy butanol
- B. 3-hydroxy butanol
- C. 3-hydroxy butanal
- D. 2-hydroxy butanal

Answer:



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14. In the reduction of acetaldehyde using $LiAlH_4$ the hydride ion acts as

- A. electrophile
- B. nucleophile
- C. both (a) and (b)
- D. a free radical

Answer:

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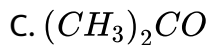
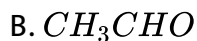
15. Which of the following statement is wrong?

- A. 2-pentanone and 3-pentanone are position isomers
- B. aqueous solution of formaldehyde is known as formalin
- C. aldehydes and ketones undergo nucleophilic substitution
- D. aldehydes act as reducing agents

Answer:

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16. A cyanohydrin of a compound X on hydrolysis gives lactic acid. The X is



Answer:

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17. The IUPAC name of is $CH_3 - \underset{\underset{CH_3}{|}}{C} = CH - \underset{\underset{O}{||}}{C} - CH_3$

A. 4-methylpent-3-en-2-one

B. 2-methylpent-3-en-2-one

C. 3-methyl pent-2-en-1-one

D. None of these

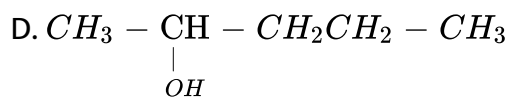
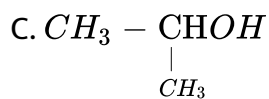
Answer:

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18. Which of the following does not give iodoform test?

A. aceto phenone

B. benzophenone



Answer:

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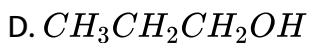
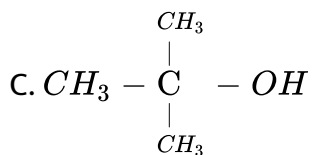
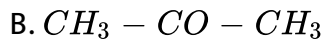
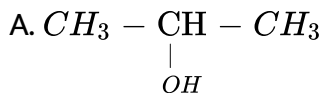
19. $CH_3COCH_3 \xrightarrow{\text{conc. } H_2SO_4}$? The product is _____

- A. mesitylene
- B. mesityl oxide
- C. phorone
- D. paraldehyde

Answer:

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20. Which compound on strong oxidation gives propionic acid?



Answer:

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21. The compound used in the preparation of the tranquilizer, sulphonal is _____

- A. acetone
- B. acetophenone
- C. isopropyl alcohol
- D. glycol

Answer:

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22. Calcium acetate + calcium benzoate $\xrightarrow{\text{distillation}}$ gives

- A. benzophenone
- B. benzaldehyde
- C. acetophenone
- D. phenyl benzoate

Answer:

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Self Evaluation B Answer In One Or Two Sentences

1. What type of aldehydes undergo Cannizzaro reaction ?

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2. What is urotropine? Give its use.

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3. What happens when calcium acetate is dry distilled ?

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4. What is formalin? Write its use.

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5. How is acetophenone prepared by Friedel-Crafts method ?

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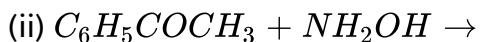
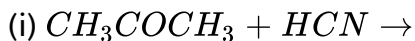
6. Write a note on haloform reaction.

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7. How will you convert acetophenone to phenacyl bromide ?

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8. Predict the formulae of the products in the following reactions.



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9. Give two tests for aldehydes.

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10. Mention the industrial use of formaldehyde.

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1. Write any three methods of preparing formaldehyde from alcohol.

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2. How does formaldehyde react with (i) NH_3 , (ii) CH_3MgI followed by hydrolysis and (iii) $NaOH$.

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3. Illustrate the reducing property of acetaldehyde with examples.

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4. How is acetone converted to

(i) mesitylene (b) mesityl oxide, (iii) phorone and (iv) isopropyl alcohol.

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5. Give nucleophilic addition reaction of acetaldehyde with (a) $NaHSO_3$, and (b) $LiAlH_4$.

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6. How are the following conversions carried out ?

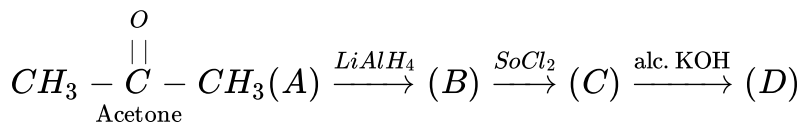
(i) benzaldehyde from Toluene, (ii) acetophenone from benzene, and
(iii) benzoin from benzaldehyde.

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7. Write a note on (i) Perkins reaction, and (ii) Knoevenagel reaction.

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8. Identify (B), (C) and (D)



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9. How will you synthesise acetaldehyde from formaldehyde ?



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10. How will you distinguish between 2-pentanone and 3-pentanone.



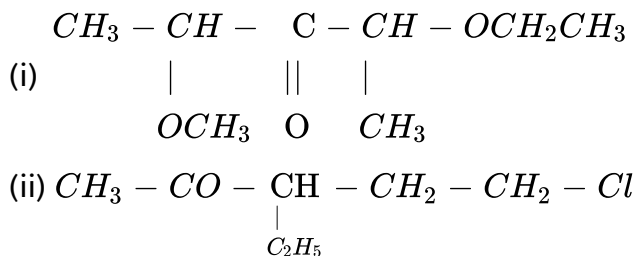
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11. How will you synthesise acetone from acetaldehyde ?



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12. Give the IUPAC names of



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13. An organic compound, C_2H_4O gives a red precipitate when warmed with Fehling's solution. It also undergoes aldol condensation in presence of alkali.

(i) Write IUPAC name of the compound.

(ii) What is the hybridization of carbon atoms in the compound ?

(iii) Write equation for the reaction.

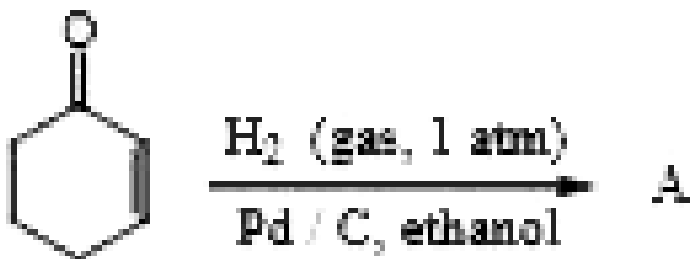
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14. Write the structural formula of the main product formed when , (i) The compound obtained by hydration of ethyne is treated with dilute alkali. (ii) Methanal reacts with ammonia.

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Evaluation

1. The correct structure of the product 'A' formed in the reaction

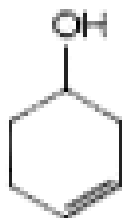


A.

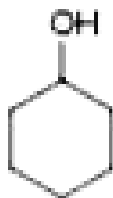




B.



C.



D.

Answer: B



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2. The formation of cyanohydrin from acetone is an example of

- A. nucleophilic substitution
- B. electrophilic substitution
- C. electrophilic addition
- D. Nucleophilic addition

Answer: D

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3. Reaction of acetone with one of the following reagents involves nucleophilic addition followed by elimination of water. The reagent is

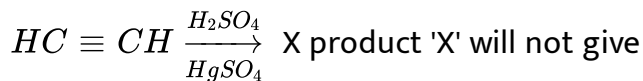
- A. Grignard reagent
- B. Sn / HCl
- C. hydrazine in presence of slightly acidic solution
- D. hydrocyanic acid

Answer: C



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4. In the following reaction,

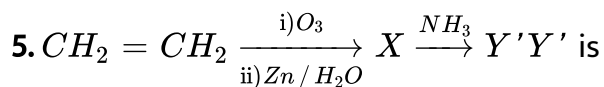


- A. Tollen's test
- B. Victor meyer
- C. Iodoform test
- D. Fehling

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- A. Formaldelyde

B. diacetoneammonia

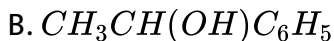
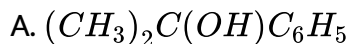
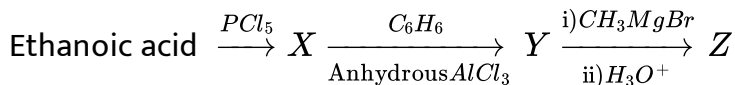
C. hexamethylenetetraamine

D. oxime

Answer: C

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6. Predict the product Z in the following series of reactions



D.



Answer: A



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7. Assertion: 2,2 – dimethyl propanoic acid does not give HVZ reaction.

Reason: 2 – 2, dimethyl propanoic acid does not have α – hydrogen atom

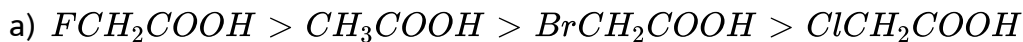
- A. if both assertion and reason are true and reason is the correct explanation of assertion.
- B. if both assertion and reason are true but reason is not the correct explanation of assertion.
- C. assertion is true but reason is false
- D. both assertion and reason are false.

Answer: A

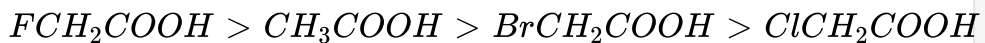


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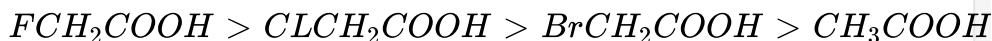
8. Which of the following represents the correct order of acidity in the given compounds



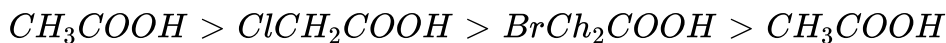
A.



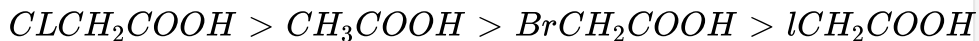
B.



C.



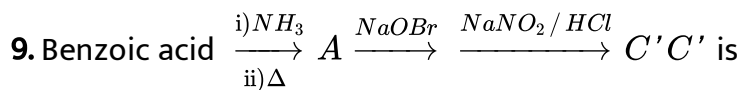
D.



Answer: A



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- A. anilinium chloride
- B. O - nitro aniline
- C. benzene diazonium chloride
- D. m - nitro benzoic acid

Answer: C



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- A. Finkelstein reaction
- B. Haloform reaction
- C. Hell - Volhard - Zelinsky reaction
- D. none of these

Answer: C

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11. $CH_3Br \xrightarrow{KCN} (A) \xrightarrow{H_2O^+} (B) \xrightarrow{PCl_5} (C)$ product (c) is

- A. acetylchloride
- B. chloro acetic acid
- C. α - chlorocyano ethanoic acid
- D. none of these

Answer: A

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12. Which one of the following reduces tollens reagen

- A. formic acid

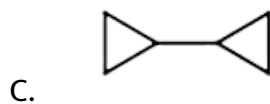
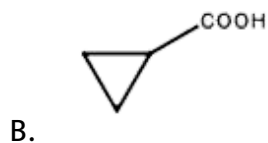
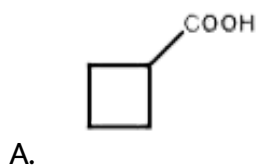
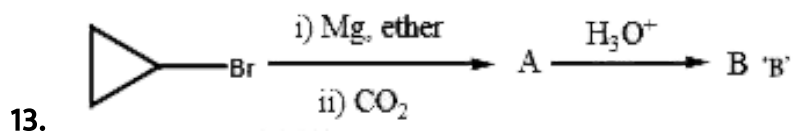
B. acetic acid

C. benzophenone

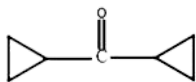
D. none of these

Answer: A

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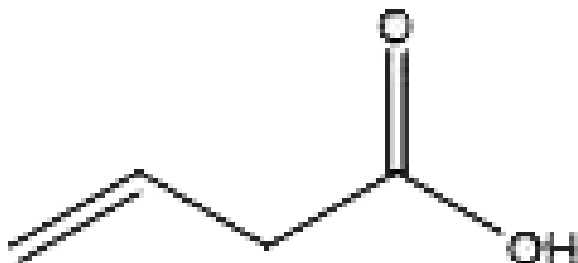
D.



Answer: B

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14. The IUPAC name of



A. but - 3- enoicacid

B. but - 1- ene-4-oicacid

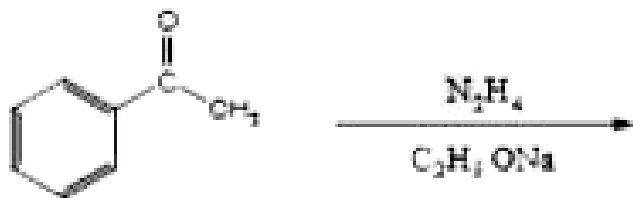
C. but - 2- ene-1-oic acid

D. but -3-ene-1-oicacid

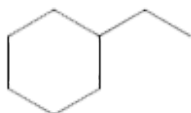
Answer: A

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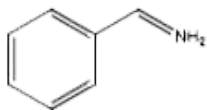
15. Identify the product formed in the reaction



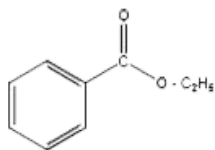
A.

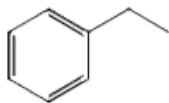


B.



C.



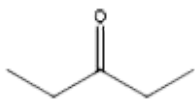


D.

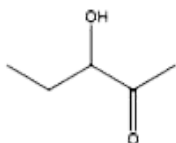
Answer: D

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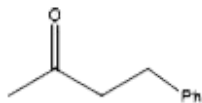
16. In which case chiral carbon is not generated by reaction with HCN



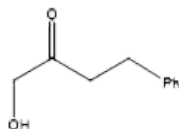
A.



B.



C.



D.

Answer: A

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17. Assertion : p - N, N - dimethyl aminobenzaldehyde undergoes benzoin condensation

Reason : The aldehydic (-CHO) group is meta directing

- A. if both assertion and reason are true and reason is the correct explanation of assertion
- B. if both assertion and reason are true but reason is not the correct explanation of assertion
- C. assertion is true but reason is false
- D. both assertion and reason are false

Answer: B

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18. Which one of the following reaction is an example of disproportionation reaction

- A. Aldol condensation
- B. cannizaro reaction
- C. Benzoin condensation
- D. none of these

Answer: B



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19. Which one of the following undergoes reaction with 50% sodium hydroxide solution to give the corresponding alcohol and acid

- A. Phenylmethanal
- B. ethanal

C. ethanol

D. methanol

Answer: A

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20. The reagent used to distinguish between acetaldehyde and benzaldehyde is

A. Tollens reagent

B. Fehling's solution

C. 2,4 – dinitrophenyl hydrazine

D. semicarbazide

Answer: B

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21. Phenyl methanal is reacted with concentrated NaOH to give two products X and Y. X reacts with metallic sodium to liberate hydrogen X and Y are

- A. sodiumbenzoate and phenol
- B. Sodium benzoate and phenyl methanol
- C. phenyl methanol and sodium benzoate
- D. none of these

Answer: C



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22. In which of the following reactions new carbon – carbon bond is not formed?

- A. Aldol condensation
- B. Friedel craft reaction

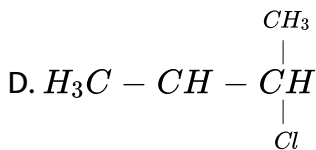
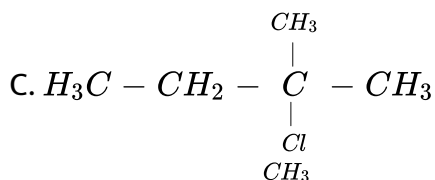
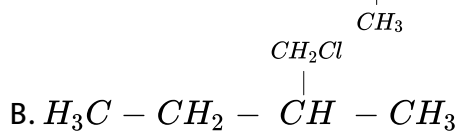
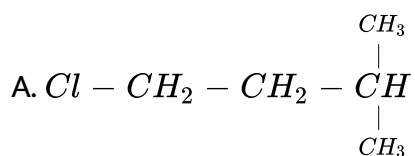
C. Kolbe's reaction

D. Wolf kishner reduction

Answer: D

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23. An alkene "A" on reaction with O_3 and $Zn - H_2O$ gives propanone and ethanol in equimolar ratio. Addition of HCl to alkene "A" gives "B" as the major product. The structure of product "B" is



Answer: C



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24. Carboxylic acids have higher boiling points than aldehydes, ketones and even alcohols of comparable molecular mass. It is due to their

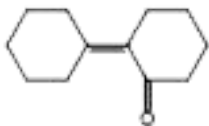
- A. more extensive association of carboxylic acid via van der Waals force of attraction
- B. formation of carboxylate ion
- C. formation of intramolecular H-bonding
- D. formation of intermolecular H – bonding

Answer: D

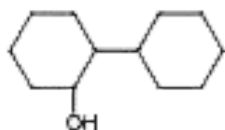


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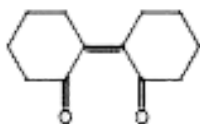
25. Of the following, which is the product formed when cyclohexanone undergoes aldol condensation followed by heating?



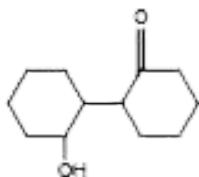
A.



B.



C.



D.

Answer: A



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