



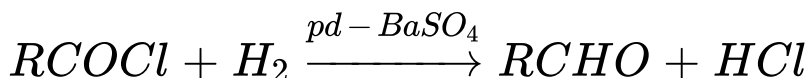
CHEMISTRY

BOOKS - MBD -HARYANA BOARD

ALDEHYDES, KETONES AND CARBOXYLIC ACIDS

Objective Type Questions Select The Correct Answer

1. What is the name of the following reaction :



- A. Stephen reaction
- B. Rosenmund reaction
- C. Etard reaction
- D. Aldol condensation

Answer: B



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2. The solution used to preserve biological specimens is :

- A. Tollen's Reagent

B. Formalin

C. Vanillin

D. Acetone.

Answer: B



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3. Which of the following cannot reduce Fehling solution ?

A. HCOOH

B. CH_3COOH

C. HCHO

D. CH_2CHO .

Answer: B



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4. Which is used to preserve biological specimens
?

A. Acetone

B. Chloroform

C. Ethanal

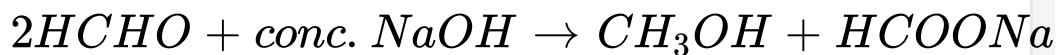
D. Formaldehyde.

Answer: D



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5.



is:

A. Cross aldol condensation

B. Aldol condensation

C. Cannizzaro reaction

D. Rosenmund's reaction.

Answer: C



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6. Methyl ketones are characterized through :

A. Tollen's reagent

B. Iodoform test

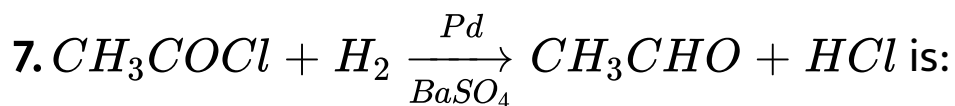
C. Schiff's test

D. None.

Answer: B



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- A. Cross aldol condensation
- B. Aldol condensation
- C. Cannizzaro reaction
- D. Rosenmund's reaction

Answer: D



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8. The IUPAC name of Acetone is :

A. Propanal

B. Propanone

C. Propanol

D. None of these.

Answer: B



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9. Among the following which has lowest pKa values ?

A. HCOOH

B. CH_3COOH

C. $(\text{CH}_3)_2\text{CHCOOH}$

D. $\text{CH}_3\text{CH}_2\text{COOH}$

Answer: A



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10. Which of the following cannot reduce Tollen's reagent?

A. HCOOH

B. HCHO

C. CH_3CHO

D. CH_3COCH_3

Answer: D



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11. IUPAC name of acetic acid is :

A. Methanal

B. 2- Pentanone

C. Ethanoic acid

D. Methanoic acid.

Answer: D



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12. Which of the following cannot reduce Fehling solution ?

A. HCOOH

B. HCHO

C. CH_3CHO

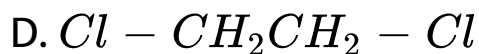
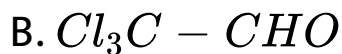
D. CH_3COOH

Answer: C



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13. Which of the following reacts with water ?



Answer: B



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14. $C_6H_5 - CH = CH - CHO$ is

- A. Benzaldehyde
- B. Salicylaldehyde
- C. Cinamaldehyde
- D. None of these.

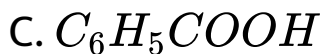
Answer: C



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15. Which is strongest acidic?



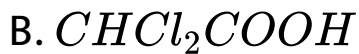
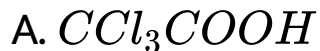


Answer: C



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16. Which is most acidic?



C. $CH_2ClCOOH$

D. CH_3COOH

Answer: A



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17. $C_6H_5COC_6H_5$ is:

A. Benzophenone

B. Acetophenone

C. Cinnamaldehyde

D. None of these.

Answer: A



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18. HVZ reaction is used to prepare :

A. α -Halo acid

B. β -Halo acid

C. $\alpha - \beta$ -Unsaturated acid

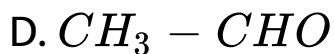
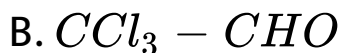
D. None of these.

Answer: A



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19. Which of the following does not undergo Aldol condensation ?

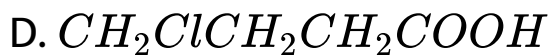
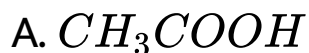


Answer: B



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20. Strongest acid is:



Answer: B



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Very Short Answer Type Questions

1. What is meant by cyanohydrin ?



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2. Write Clemmenson reduction.



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3. Write Cannizzaro's reaction.



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4. The IUPAC name of  is:



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5. Which product is formed when calcium formate is distilled ?



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6. The IUPAC name of  is:



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7. How will you convert acetone to 2-methyl-2-propanol ?



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8. Which type of aldehydes undergo Cannizzaro's reaction ?



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9. What is Hofmann's reduction reaction ?



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10. What happens when acetyl chloride reduced with $LiAlH_4$?



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11. Draw structure of cyclopropanone oxime.



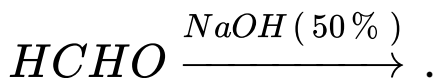
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12. How will you convert acetaldehyde to methane ?



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13. Complete the reaction:




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14. Draw the structure of propane-1, 2, 3 tricarbaldehyde.



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15. Write IUPAC name of the compound .

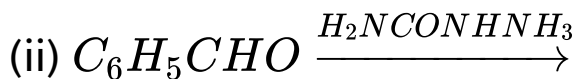


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Short Answer Type Questions

1. Complete the reactions :

(i) 



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2. Describe the following :

(i) Cross-aldol condensation,

(ii) Haloform reaction.



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3. Discuss the following reactions :

(i) HVZ reaction.

(ii) Decarboxylation reaction.



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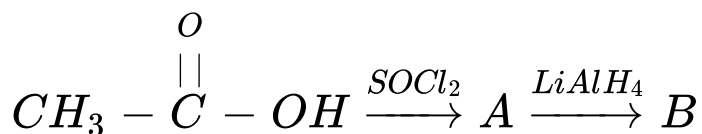
4. Write the chemical reaction of a carboxylic acid with:

(a) Na_2CO_3 (b) PCl_5 (c) NH_3 .



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5. Give the formula of A and B:



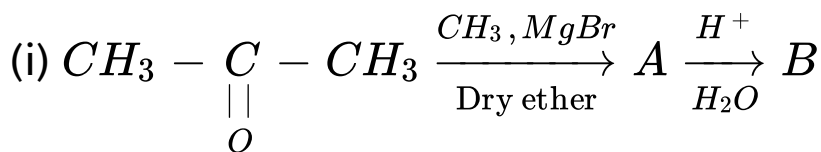
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6. Write the IUPAC name of $(CH_3CH_2)_2NCH_3$:



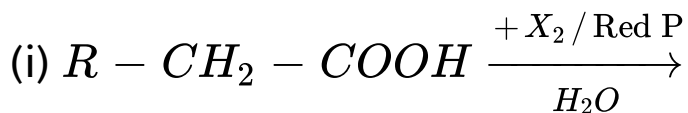
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7. Complete the following reaction:



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8. Complete the following reaction:



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9. Why dipole moments of aldehydes and ketones are higher than alcohols ?



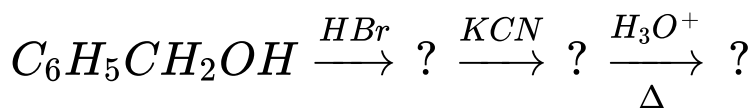
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10. (a) Write IUPAC names of the following:

(i) HOOC-COOH

(ii) 

(b) Complete the following:



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11. Why aldehydes are more reactive than ketones

?



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12. (a) Write IUPAC names of the following:

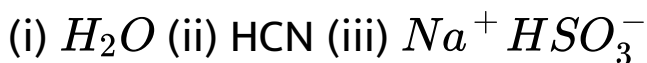


(ii) 



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13. Write the chemical reaction of carbonyl group with



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14. How is acetone prepared from isopropyl alcohol?



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15. What happens when calcium acetate is dry distilled ?



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16. Aldehydes have higher boiling points than alkanes of similar molecular weight, give suitable

reasons.



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17. Lower members of aldehydes are soluble in water whereas the higher members are not. Give reasons.



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18. Point out the difference between addition reactions in alkenes and carbonyl compounds.



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19. (a) Discuss briefly the following reactions :

(i) Gattermann Koch reaction

(ii) Rosenmund reaction.

(b) Trichloro acetic acid is stronger acid than dichloro acetic acid. Explain.



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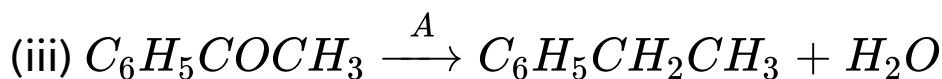
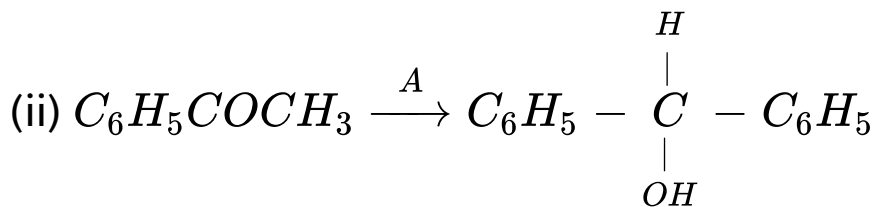
20. Why is it necessary to control the pH during the addition of ammonia derivative reaction of aldehydes and ketones with ammonia derivative.



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21. Identify A from the following:

(i)



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22. Benzophenone does not react with $NaHSO_3$.

Explain.



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23. Why are aliphatic carboxylic acids stronger than phenols?



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24. Explain the term ozonolysis with an example.



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25. What information can be obtained on the structure of alkene on ozonolysis ?



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26. By means of suitable chemical test, how will you distinguish acetophenone and benzophenone.



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27. Give two tests for aldehyde.



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28. By means of a suitable chemical test, how will you distinguish an aldehyde from that of a ketone ?



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29. Which type of aldehydes undergo aldol condensation. Give an example.



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30. Write a note on Clemmensen reduction.

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31. What is formalin ? Give its use.

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32. What happens when formaldehyde reacts with ammonia ?

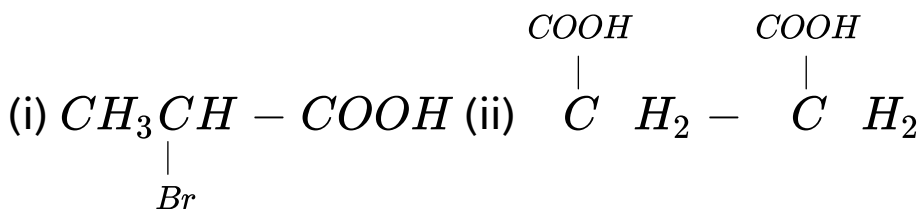


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33. How are aldehydes distinguished from ketones using Tollen's and Fehling's reagents ?
Give complete chemical reactions.

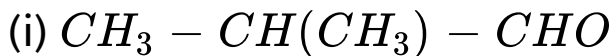
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34. Write the IUPAC names of :



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35. Write the IUPAC names of the following:



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Long Answer Type Questions

1. (a) How will you distinguish between Pentan-2-one and Pentan-3-one with the help of Iodoform test ?

(b) How will you bring about following conversions ?

(i) Benzoic acid to m-Nitrobenzyl alcohol.

(ii) Benzaldehyde to Benzophenone.

(iii) Benzoic acid to Benzamide.



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2. Describe the following:

(a) Aldol condensation

(b) Decarboxylation.



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3. Write the chemical reactions of CH_3COCH_3

with the following:

(i) $NH_2 - OH$ (ii) HCN

(iii) $R - MgX$ (iv) $NaHSO_3$

(v) $Zn - Hg / HCl$



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4. Discuss the following reactions of aldehydes

and ketones :

(a) Oxidation (b) Reduction.



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5. (a) Discuss the important physical properties of carboxylic acids.

(b) Discuss the structure of carboxylic acids. How do you account for acidic character of carboxylic acids ?



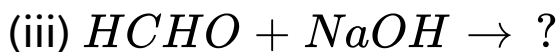
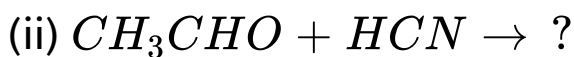
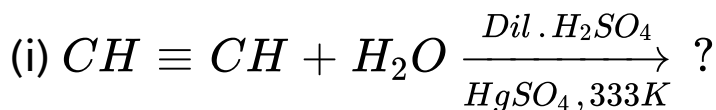
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6. Discuss the general chemical properties of carboxylic acids.



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7. (a) Complete the following reactions:



(b) How will you prepare RCOOH from?

(i) Alcohol

(ii) Nitrile.



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8. (a) Convert benzene into

(i) Acetophenone (ii) Benzaldehyde

(iii) Benzophenone.

(b) Write a note on aldol condensation.



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