CHEMISTRY

BOOKS - DISHA CHEMISTRY (HINGLISH)

ALDEHYDES, KETONES AND CARBOXYLIC ACIDS

Mcqs

1. Which of the following compounds is most reactive towards nucleophilic addition reactions?

A. $CH_3 - \overset{\overset{O}{||}}{C} - H$

B. $CH_3 - \overset{\overset{O}{||}}{C} - CH_3$

C. 

D. 

Answer: A

View Text Solution

2. Arrange the following in order of decreasing acidity

A. B gt A gt C

B. C gt B gt A

C. A gt C gt B

D. A gt B gt C

Answer: A

View Text Solution

3. A and B in the following reactions are

A. 

B. 

C. 

D. $A = RR'CH_2CN, B = NaOH$

Answer: A

View Text Solution

4. Acetaldehyde reacts with

A. Electrophiles only

B. Nucleophiles only

C. Free radicals only

D. Both electrophiles and nucleophiles

Answer: B

View Text Solution

5.

$$C_6H_5CH=CHCHO \xrightarrow{X} C_6H_5CH=CHCH_2OH$$

In the above sequence X can be :

A. H_2/Ni

B. $NaBH_4$

C. $K_2Cr_2O_7/H^+$

D. Both (a) and (b)

Answer: B

View Text Solution

6. Which one of the following can be oxidised to the corresponding carbonyl compound?

A. 2-hydroxy-propane

B. Ortho-nitro-phenol

C. Phenol

D. 2-methyl-2 hydroxy-propane

Answer: A

View Text Solution

7. In the following reaction sequence, the correct structures of E, F and G are

A. 

B. 

C. 

D. 

Answer: C

View Text Solution

8. ketones $[R-\underset{\underset{O}{\|}}{C}-R_1$, where $R=R_1$ = alkyl groups] can be obtained in one step by

A. oxidation of primary alcohols

B. hydrolysis of esters

C. oxidation of tertiary alcohols

D. reaction of acid halides with alcohols

Answer: C

View Text Solution

9. The compound that neither forms semicarbazone nor oxime is

A. HCHO

B. CH_3COCH_2Cl

C. CH_3CHO

D. $CH_3CONHCH_3$

Answer: D

View Text Solution

10. Ethyl ester $\xrightarrow[\text{excess}]{CH_3MgBr} P$. The product P will be

A. 

B. 

C. 

D. 

Answer: A

View Text Solution

11. Which of the following compounds when heated with CO at $150^\circ C$ and 500 atm pressure in presence

of BF_3 forms ethyl propionate ?

A. C_2H_5OH

B. CH_3OCH_3

C. $C_2H_5OC_2H_5$

D. $CH_2OC_2H_5$

Answer: C

View Text Solution

12. Benzaldehyde is obtained from Rosenmund's reduction of

A. 

B. 

C. 

D. 

Answer: B

View Text Solution

13. Acetone oxime is obtained by reacting acetone with

A. NH_3

B. NH_2OH

C. NH_2Na

D. NH_2NH_2

Answer: B

View Text Solution

14.

$$2C_6H_5CHO \xrightarrow[H_2O]{OH^-} C_6H_5CH_2OH + C_6H_5COO^-$$

Which of the following statements are correct regarding the above reduction of benzaldehyde to benzyl alcohol?

(i)One hydrogen is coming from H_2O as H^+ and another from C_6H_5CHO as H^-

(ii)One hydrogen is coming from H_2O as H^- and another from C_6H_5CHO as H^+

(iii) One hydrogen from H_2O and another from C_6H_5CHO, both in the form of H^-

(iv) The reduction is an example of disproportionation reaction

A. (i),(ii) and (iii)

B. (i) and (iv)

C. (ii),(iii) and (iv)

D. (iii) and (iv)

Answer: B

View Text Solution

15. A carboxylic acid can best be converted into acid chloride by using

A. PCl_5

B. $SOCl_2$

C. HCl

D. ClCOCOCl

Answer: D

View Text Solution

16. Among the given compounds, the most susceptible to nucleophilic attack at the carbonyl group is

A. MeCOCl

B. MeCHO

C. MeCOOMe

D. MeCOOCOMe

Answer: A

View Text Solution

17. Pinacolone is

A. 2, 3-Dimethyl-2, 3-butanediol

B. 3,3-Dimethyl-2-butanone

C. 1-Phenyl-2-propanone

D. 1, 1-Diphenyl-1, 2-ethandiol

Answer: B

View Text Solution

18. The correct sequence of reagents for the following conversion will be :

A.

$[Ag(NH_3)_2]^+OH^-, H^+/CH_3OH, CH_3MgBr$

B.

$CH_3MgBr, H^+/CH_3OH, [Ag(NH_3)_2]^+OH^-$

C.

$CH_3MgBr, [Ag(NH_3)_2]^+OH^-, H^+/CH_3OH$

D.

$[Ag(NH_3)_2]^+OH^-, CH_3MgBr, H^+/CH_3OH$

Answer: A

View Text Solution

19. Benzaldehyde reacts with ethanoic KCN to give

A. $C_6H_5CHOHCN$

B. $C_6H_5CHOHCOC_6H_5$

C. $C_6H_5CHOHCOOH$

D. $C_6H_5CHOHCHOHC_6H_5$

Answer: B

View Text Solution

20. Which gives lactic acid on hydrolysis after reacting with HCN?

A. HCHO

B. CH_3CHO

C. C_6H_5CHO

D. CH_3COCH_3

Answer: B

View Text Solution

21. Reduction of  can be carried out with

A. catalytic reduction

B. Na / C_2H_5OH

C. Wollf-Kishner reduction

D. $LiAlH_4$

Answer: C

View Text Solution

22. The end product B in the sequence of reactions

$R - X \xrightarrow{CN^-} A \xrightarrow{NaOH} B$ is

A. an alkane

B. a carboxylic acid

C. sodium salt of carboxylic acid

D. a ketone

Answer: C

View Text Solution

23. Phenylmethyl ketone can be converted into ethylbenzene in one step by which of the following reagents?

A. $LiAlH_4$

B. Zn-Hg/HCl

C. $NaBH_4$

D. CH_3MgI

Answer: B

View Text Solution

24. Conversion of acetaldehyde into ethyl acetate in presence of aluminium ethoxide is called

A. Aldol condensation

B. Cope reaction

C. Tischenko reaction

D. Benzoin condensation

Answer: C

View Text Solution

25. An organic compound A upon reacting with NH_3 gives B. On heating B gives C. C in presence of KOH reacts with Br_2 to given $CH_3CH_2NH_2$. A is :

A. CH_3COOH

B. $CH_3CH_2CH_2COOH$

C. $CH_3 - \underset{\underset{CH_3}{|}}{C}\ H - COOH$

D. CH_3CH_2COOH

Answer: D

View Text Solution

26. Which one of the following can be oxidised to the corresponding carbonyl compound ?

A. 2-hydroxypropane

B. Ortho-nitrophenol

C. Phenol

D. 2-methyl-2 hydroxypropane

Answer: A

View Text Solution

27. The reagent which can be used to distinguish acetophenone from benzophenone is

A. 2,4- dinitrophenylhydrazine

B. aqueous solution of $NaHSO_3$

C. benedict reagent

D. I_2 and Na_2CO_3

Answer: D

View Text Solution

28. $R - CH_2 - CH_2OH$ can be converted into RCH_2CH_2COOH. The correct sequence of reagent is

A. PBr_3, KCN, H^+

B. PBr_3, KCN, H_2

C. KCN, H^+

D. HCN, PBr_3, H^+

Answer: A

View Text Solution

29. Sodium salt of an organic acid 'X' produces effervescence with conc. H_2SO_4. 'X' reacts with the acidified aqueous $CaCl_2$ solution to give a white precipitate which decolourises acidic solution of $KMnO_4$. 'X' is :

A. C_6H_5COONa

B. HCOONa

C. CH_3COONa

D. $Na_2C_2H_4$

Answer: D

View Text Solution

30. In a set of the given reactions, acetic acid yielded a product C.

$$CH_3COOH + PCl_5 \rightarrow A \xrightarrow[Anh.\,AlCl_3]{C_6H_6} B \xrightarrow[\text{Ether}]{C_2H_5MgBr} C$$

Product C would be

A. $CH_3 - \overset{C_2H_5}{\overset{|}{C}}(OH)C_6H_5$

B. $CH_3CH(OH)C_2H_5$

C. $CH_3COC_6H_5$

D. $CH_3CH(OH)C_6H_5$

Answer: A

View Text Solution

31. Which one of the following will most readily be dehydrated in acidic condition ?

A. 

B. 

C. 

D. 

Answer: A

View Text Solution

32. Which of the following contain an aldehyde?

A. Vanilla beans

B. Meadow sweet

C. Cinnamon

D. All of these

Answer: D

View Text Solution

33. Heating mixture of sodium benzoate and soda-lime gives

A. benzene

B. methane

C. sodium phenoxide

D. calcium benzoate

Answer: A

View Text Solution

34. Observe the following structures and pick up the correct statement

A. Carbonyl carbon of I is more electrophilic than that of II

B. Carbonyl carbon of I is less electrophilic than that of II

C. Carbonyl carbon of both structures have equal electrophilic character

D. It depends upon the complete structure of the compound

Answer: B

View Text Solution

35. An enantiomerically pure acid is treated with a racemic mixture of an alcohol having one chiral carbon. The ester formed will be

A. Optically active mixture

B. Pure enantiomer

C. Meso compound

D. Racemicmixture

Answer: A

View Text Solution

36. m-Chlorobenzaldehyde on reaction with conc. KOH at room temperature gives

A. Potassium m-chlorobenzoate and m-hydroxybenzaldehyde

B. m-hydroxybenzaldehyde and m-chlorobenzyl alcohol

C. m-chlorobenzyl alcohol and m-hydroxybenzyl alcohol

D. potassium m-chlorobenzoate and m-chlorobenzyl alcohol

Answer: D

View Text Solution

37. The correct order of increasing acid strength of the compounds

(A)CH_3CO_2H , (B)$MeOCH_3CO_2H$

(C) CF_3CO_2H

A. D lt A lt B lt C

B. A lt D lt B lt C

C. B lt D lt A lt C

D. D lt A lt C lt B

Answer: A

View Text Solution

38. The increasing order of the rate of HCN addition to compound A-D is

(A)HCHO , (B)CH_3COCH_3 , (C) $PhCOCH_3$, (D)PhCOPh

A. D lt Clt Blt A

B. C lt D lt B lt A

C. A lt B lt C lt D

D. D lt B lt C lt A

Answer: A

View Text Solution

39. The carboxyl functional group (-COOH) is present in

A. pictic acid

B. barbituric acid

C. ascorbic acid

D. aspirin

Answer: D

View Text Solution

40. Which alkene on ozonolysis gives CH_3CH_2CHO and $CH_3\overset{\overset{O}{||}}{C}CH_3$

A. 

B. $CH_3CH_2CH = CHCH_2CH_3$

C. $CH_3CH_2CH = CHCH_3$

D. $CH_3 - \underset{\underset{CH_3}{|}}{C} = CHCH_3$

Answer: A

View Text Solution

41. Which one of the following is reduced with zinc and hydrochloric acid to give the corresponding hydrocarbon ?

A. Acetamide

B. Acetic acid

C. Ethyl acetate

D. Butan-2-one

Answer: D

View Text Solution

42. Acetal is produced by reacting an alcohol in the presence of dry HCl with

A. acetaldehyde

B. ketone

C. ether

D. carboxylic acid

Answer: A

View Text Solution