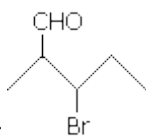


INDIAN SCHOOL MUSCAT
CLASS 12
CHEMISTRY
ALDEHYDES, KETONES AND CARBOXYLIC ACIDS
OBJECTIVE TYPE QUESTIONS

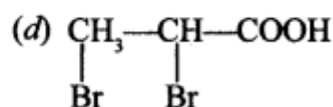
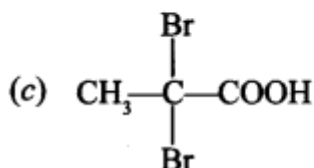
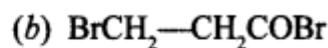
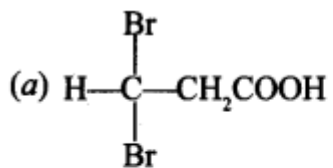
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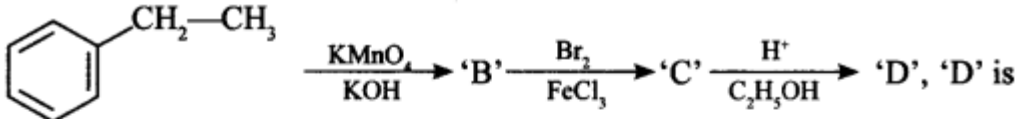


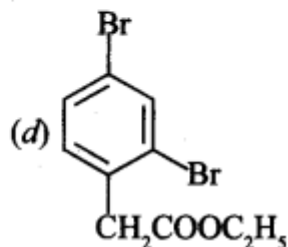
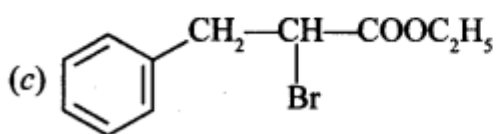
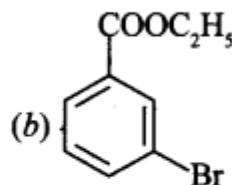
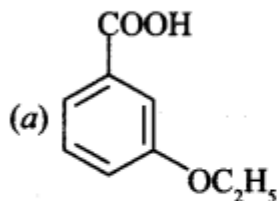
The IUPAC name of is

- a) 2-methyl-3-bromohexanal
 - b) 2-methyl-3-bromobutanal
 - c) 3-bromo-2-methylbutanal
 - d) 3-bromo-2-methylpentanal
- 2 Heating a mixture of sodium benzoate and soda lime gives
- a. calcium benzoate
 - b. benzene
 - c. sodium benzoate
 - d. methane
- 3 Reduction of aldehydes and ketones into hydrocarbons using zinc amalgam and cone. HCl is called:
- (a) Cope reduction
 - (b) Dow reduction
 - (c) Wolff Kishner reduction
 - (d) Clemensen reduction
- 4 Benzoic acid reacts with conc.HNO₃ and conc.H₂SO₄ to give
- a. o-nitrobenzoic acid
 - b. p-nitrobenzoic acid
 - c. m-nitrobenzoic acid
 - d. o,p-dinitrobenzoic acid
- 5 Under Wolff-Kishner reduction conditions, the conversions which may be brought about are
- a. cyclohexanone into cyclohexanol
 - b. benzaldehyde into benzyl alcohol
 - c. cyclohexanone into cyclohexanol
 - d. benzophenone into diphenyl methane
- 6 A new C-C bond formation is possible in
- a. Cannizzaro reaction

- b. Friedel crafts reaction
 c. Clemmensen reduction
 d. HVZ reaction
- 7 CH_3CHO and $\text{C}_6\text{H}_5\text{CH}_2\text{CHO}$ can be distinguished chemically by
 (a) Benedict's test
 (b) Iodoform test
 (c) Tollen's reagent test
 (d) Fehling's solution test
- 8 Propanoic acid with Br_2/P_4 yields a dibromo product. The structure will be



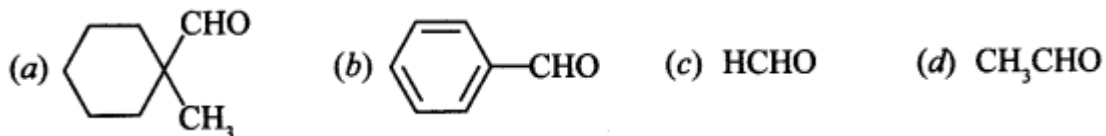
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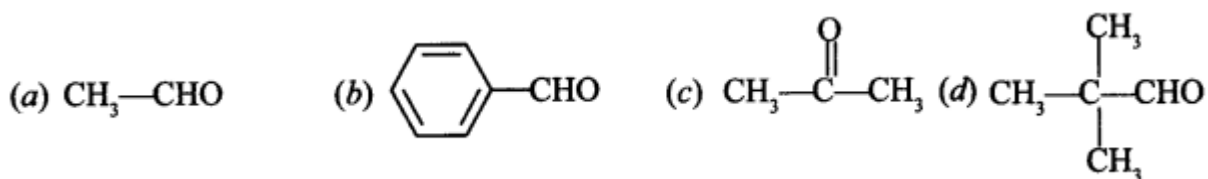
- 10 Which of the following statements is not correct?
 a) Aldehydes and ketones undergo nucleophilic addition
 b) Aldehydes and ketones undergo electrophilic substitution
 c) Aldehydes and ketones contain polar carbonyl group
 d) Lower members of aldehydes and ketones are soluble in water due to hydrogen bonding

- 11 The correct order of increasing acidic strength is
 (a) Phenol < Ethanol < Chloroacetic acid < Acetic acid
 (b) Ethanol < Phenol < Chloroacetic acid < Acetic acid
 (c) Ethanol < Phenol < Acetic acid < Chloroacetic acid
 (d) Chloroacetic acid < Acetic acid < Phenol < Ethanol

- 12 Cannizaro's reaction is not given by



- 13 Which of the following compounds do not undergo aldol condensation?



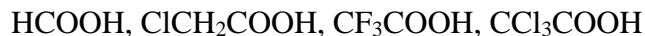
- 14 For distinction between pentan-2-one and pentan-3-one, which reagent can be employed?

- (a) K₂Cr₂O₇/H⁺
 (b) ZnHg/HCl
 (c) NaOH/I₂
 (d) AgNO₃/NH₄OH

- 15 Compound 'A' undergoes formation of cyanohydrins which on hydrolysis gives lactic acid (CH₃CHOHCOOH). Therefore, compound 'A' is

- A formaldehyde
 B acetaldehyde
 C acetone
 D benzaldehyde

- 16 Among the following acids,



which is:

Most acidic-

Least acidic-

- 17 Acetone reacts with iodine (I₂) to form iodoform in the presence of

- (a) CaCO₃
 (b) NaOH
 (c) KH
 (d) MgCO₃

- 18 Which of the following compounds with molecular formula, C_5H_{10} yields acetone as one of the product, on ozonolysis?
- 2-methyl-2-butene
 - 3-methyl-1-butene
 - Cyclopentane
 - 2-methyl-1-butene
- 19 Benzoic acid gives benzene on being heated with X and phenol gives benzene on being heated with Y. Therefore, X and Y are respectively
- sodalime and copper
 - Zn dust and NaOH
 - Cu and sodalime
 - sodalime and zinc dust

FILL IN THE BLANKS

- In Cannizaro reaction, aromatic aldehydes undergo disproportionation in presence of sodium or potassium hydroxide to give corresponding _____ and _____.
- Aldehydes and ketones give _____ reaction with hydrazine.
- $CH_3-C \equiv CH \xrightarrow[\text{Dil. } H_2SO_4]{Hg^{2+}}$
- When acetaldehyde is heated with Fehling's solution it gives a red precipitate of _____
- Among the following the least reactive to nucleophilic addition reactions is _____
[Ethanal, Propanal, Propanone, Butanone]
- Formaldehyde does not undergo aldol condensation due to _____
- Carboxylic acids have higher boiling point than alcohols of same number of C atoms due to _____
- Phenol can be distinguished from benzoic acid using _____ reagent.
- Carboxylic acids containing _____ undergo HVZ reaction.
- _____ is used for the purification of aldehydes and ketones.

ASSERTION AND REASONING:

- Assertion: Aromatic aldehydes and formaldehyde undergo Cannizaro reaction.
Reason: Aromatic aldehydes are almost as reactive as formaldehyde
- Assertion (A): Aldehydes and ketones, both react with Tollen's reagent to form silver mirror.
Reason (R): Both, aldehydes and ketones contain a carbonyl group.

3 Assertion: Pka of acetic acid is lower than that of phenol

Reason: Phenoxide ion is more resonance stabilized than acetate ion.

4 Assertion (A) Benzaldehyde is less reactive in comparison to ethanol towards nucleophilic attack.

Reason (R) All the carbon atoms of Benzaldehyde are sp^2 hybridised

5 Assertion (A) : The solubility of aldehydes and ketones in water decreases with increase of size of the alkyl group

Reason (R) Alkyl groups are electron releasing groups

MATCH THE FOLLOWING

1	Column I (Reactions)	Column II (Reagents)
	(a) Benzophenone \rightarrow Diphenylmethane	(i) $LiAlH_4$
	(b) Benzaldehyde \rightarrow 1-Phenylethanol	(ii) DIBAL—H
	(c) Cyclohexanone \rightarrow Cyclohexanol	(iii) $Zn(Hg)/Conc. HCl$
	(d) Phenyl benzoate \rightarrow Benzaldehyde	(iv) CH_3MgBr

2	COLUMN I	COLUMN II
	a) >C=NH	i. Hydrazone
	b) >C=N-NH_2	ii. Oxime
	c) >C=N-NH-CO-NH_2	iii. Imine
	d) >C=N-OH	iv. Semicarbazone

Multiple Choice question

1.d	2.b	3.d	4.c	5.d	6.b	7.b	8.c	9.b	10.b
11.c	12.d	13.b,d	14.c	15.b	16. a- CF_3COOH b- $HCOOH$	17.b	18.a	19.d	

Fill in the blanks

1. Acid alcohol	2.hydrazone	3.acetone	4. Cu_2O	5.butanone	6.absence of alpha H	7.extensive H bonding	8.netral $FeCl_3$
9.alpha H	10. $NaHSO_3$						

Assertion reasoning:

1. C

2. D

3. C

4. B

5. B