

Arts Commerce and Science college Bodwad, Dist: Jalgaon

Department of Chemistry

Question Bank

Class F.Y.B.Sc

Sem-I- 2020-21

Subject- Chemistry

Paper- Chemistry -II- Organic and Inorganic chemistry

1. An isomer of ethanol is _____
 - a) **Ethanol and ethoxy ethane**
 - b) methanol and methoxy methane
 - c) propionic acid and ethyl acetate
 - d) propionaldehyde and acetone

2. Which of the following does not show resonance effect-
 - a) Benzene
 - b) Toluene
 - c) Aniline
 - d) **Dimethyl amine**

3. Organic reactions are slow because reactions are...
 - a) Ionic
 - b) Non Ionic
 - c) **Between covalent compounds**
 - d) accompanied by side reactions.

4. Electromeric effect is due to....
 - a) Electronegative elements
 - b) Double bonds
 - c) Triple bonds
 - d) **All of these**

5. As the number of branches in a chain increases the boiling point of alkane.....
 - a) **Increases**
 - b) Decreases
 - c) Remain same
 - d) May increase or decrease

6. Chloroethane reacts with Na in Presence of dry ether. The Product is
 - (a) Ethane
 - (b) Propane
 - (c) **Butane**
 - (d) Ethene

7. Which represents an alkyne?
 - (a) **C₅ H₁₀**
 - (b) C₅ H₁₂
 - (c) C₃ H₈
 - (d) C₄ H₆

8. Halogenation of alkane is an example of ?
 - (a) Electrophilic Substitution
 - (b) **Nucleophilic substitution**
 - (c) Free radical substitution
 - (d) Addition reaction

9. When ethyl iodide and propyl iodide react with Sodium in presence of ether they form ?

- (a) Only One alkane
- (b) Mixture of two alkane
- (c) Mixture of three alkane
- (d) **Mixture of four alkane**

10. $CH_3CH_2OH + CH_3-Mg-Br \rightarrow$ Product. Product in given reaction is

- (a) Methane
- (b) Ethane
- (c) **Propane**
- (d) Butane

11. LPG is a mixture of?

- (a) $CH_4 + C_2H_6$ (b) $C_3H_8 + C_4H_{10}$ (c) $C_2H_4 + C_2H_2$ (d) $C_6H_6 + C_6H_{12}$

12. Give IUPAC name of $(CH_3)_2C(C_2H_5)_2$

- (a) 2-methyl-2-ethylbutane (b) Dimethyl Diethyl methane
(c) **3,3-dimethyl pentane** (d) 2,2-diethyl propane

13. Alkene usually show which type of reaction?

- (a) Substitution (b) **Addition** (c) Elimination (d) Rearrangement

14. when 3-phenyl propene reacts with HBr in the presence of peroxide, the major product form is

- (a) **2-bromo-1-phenyl propane** (b) 1,2-dibromo-3-phenyl propane
(c) 3-(0-bromo phenyl)propane (d) 1-bromo-3-phenyl propane

15. The addition of HBr to pent-2-ene gives

- (a) 2-bromo pentane (b) **3-bromo pentane**
(c) Mixture of(A) and (B) (d) 1-bromopentane

16. Addition of HCl to propene in presence of peroxide gives

- (a) **1-Chloropropane** (b) 2-Chloropropane
(c) 3-Chloropropane (d) Chloropropene peroxide

17. Ethylene dibromide on heating with alc. KOH gives mainly.

- (a) Ethane (b) Ethylene (c) **Acetylene** (d) Ethyl bromide

18. Reduction of acetylene in presence of Ni/Pd gives

- (a) **Ethane** (b) Ethene (c) Ethanol (d) Ethanaime

19. Point out the wrong statement in relation to the structure of Benzene.

a. It forms only one monosubstituted derivative

b. The C-C bond length in benzene is uniformly 1.397 Å

c. It is a resonance hybrid of a number of canonical forms

d. It has three delocalised p-molecular orbitals

20. Which is not aromatic hydrocarbon?

(a) Benzene

(b) Toluene

(c) **phenol**

(d) Naphthalene

21. Benzene reacts with CH_3COCl in presence of AlCl_3 to give

(a) $\text{C}_6\text{H}_5\text{Cl}$

(b) $\text{C}_6\text{H}_5\text{COCl}$

(c) **$\text{C}_6\text{H}_5\text{COCH}_3$**

(d) $\text{C}_6\text{H}_5\text{CH}_3$

22. Nitration of Benzene is

(a) **Electrophilic Substitution**

(b) Nucleophilic Substitution

(c) Electrophilic addition

(d) Free radical Substitution

23. Match the column AND select the correct match

column I

column II

(A) Benzene

(p) Wurtz reaction of $\text{C}_2\text{H}_5\text{Cl}$

(B) Ethene

(q) Evolves H_2 when heated with sodium metal

(C) Ethyne

(r) Dehydration of ethanol

(D) Butane

(s) Electrophilic substitution

a) (B)-S (A)-r (C)-q (D)-p

b) (C)-S (B)-r (A)-q (D)-p

c) (D)-S (B)-r (C)-q (A)-p

d) (A)-S (B)-r (C)-q (D)-p

24. The process of converting alkyl halides into alcohols involves _____.

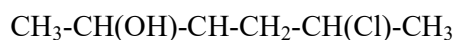
(a) addition reaction

(b) **substitution reaction**

(c) dehydrohalogenation reaction

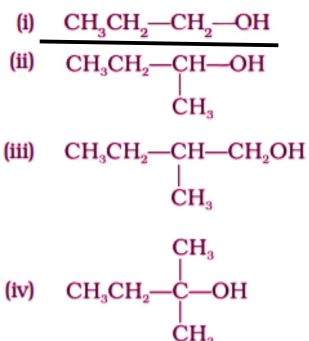
(d) rearrangement reaction

25. Give IUPAC name of the compound given below.



- a) 2-Chloro-5-hydroxyhexane
- b) 2-Hydroxy-5-chlorohexane
- c) **5-Chlorohexan-2-ol**
- d) 2-Chlorohexan-5-ol

26. Which of the following alcohols will yield the n-propyl chloride on reaction with concentrated HCl at room temperature



27. Which reagent will you use for the following reaction?



- a) **Cl₂/UV light**
- b) NaCl + H₂SO₄
- c) Cl₂ gas in dark
- d) Cl₂ gas in the presence of iron in dark

28. Arrange the following compounds in increasing order of their boiling points



- (b) < (a) < (c)
- (a) < (b) < (c)
- (c) < (a) < (b)**
- (c) < (b) < (a)

29. Which of the following is an example of vic-dihalide?

- (i) Dichloromethane
- (ii) **1,2-dichloroethane**
- (iii) Ethylidene chloride
- (iv) Allyl chloride

30. The position of –Br in the compound in CH₃CH=CHC(Br)(CH₃)₂ can be classified as _____

- a) Allyl
- b) Aryl

- c) **Vinyl**
- d) Secondary

31. Ethylidene chloride is a/an _____.

- (a) vic-dihalide
- (b) **gem-dihalide**
- (c) allylic halide
- (d) vinylic halide

32. What should be the correct IUPAC name for diethyl bromo methane?

- (a) 1-Bromo-1,1-diethylmethane
- (b) **3-Bromopentane**
- (c) 1-Bromo-1-ethylpropane
- (d) 1-Bromopentane

33. Which of the following compounds are gem-dihalides?

- (a) **Ethylidene chloride**
- (b) Ethylene dichloride
- (c) Methyl chloride
- (d) Benzyl chloride

34. Which of the following are secondary bromides?

- a) $(\text{CH}_3)_2\text{CHBr}$
- b) $(\text{CH}_3)_3\text{CCH}_2\text{Br}$
- c) **$\text{CH}_3\text{CH}(\text{Br})\text{CH}_2\text{CH}_3$**
- d) $(\text{CH}_3)_2\text{CBrCH}_2\text{CH}_3$

35. Which of the following compounds can be classified as aryl halides?

- a) $p\text{-ClC}_6\text{H}_4\text{CH}_2\text{CH}(\text{CH}_3)_2$
- b) $p\text{-CH}_3\text{CHCl}(\text{C}_6\text{H}_4)\text{CH}_2\text{CH}_3$
- c) $o\text{-BrH}_2\text{C-C}_6\text{H}_4\text{CH}(\text{CH}_3)\text{CH}_2\text{CH}_3$
- d) $\text{C}_6\text{H}_5\text{-Cl}$
- e) **Both a and d**

36. Alkyl halides are prepared from alcohols by treating with

- a) $\text{HCl} + \text{ZnCl}_2$
- b) Red P + Br_2
- c) $\text{H}_2\text{SO}_4 + \text{KI}$
- d) **from a and b**

37. The major organic product in the reaction, $\text{CH}_3 - \text{O} - \text{CH}(\text{CH}_3)_2 + \text{HI} \rightarrow$ product: is/are

- (a) $\text{CH}_3\text{I} + (\text{CH}_3)_2\text{CHOH}$
 (b) $\text{CH}_3\text{OH} + (\text{CH}_3)_2\text{CHI}$
 (c) $\text{ICH}_2\text{OCH}(\text{CH}_3)_2$
 (d) $\text{CH}_3 - \text{O} - \underset{\text{I}}{\underset{|}{\text{C}}} - (\text{CH}_3)_2$

38. Phenols are more acidic than alcohols because

- (a) **Phenoxide ion is stabilised by resonance**
 (b) Phenols are more soluble in polar solvents
 (c) Phenoxide ion does not exhibit resonance
 (d) Alcohols do not lose H atoms at all

39. Which of the following reagents cannot, be used to oxidise primary alcohols to aldehydes?

- (a) CrO_3 in anhydrous medium
 (b) **KMnO_4 in acidic medium**
 (c) Pyridinium chlorochromate
 (d) Heat in the presence of Cu at 573 K

40. Which of the following alcohols will give the most stable carbocation during dehydration?

- (a) 2-methyl-1-propanol
 (b) **2-methyl-2-propanol**
 (c) 1-Butanol
 (d) 2-Butanol

41. $(\text{CH}_3)_3\text{C}-\text{CH}_2\text{OH} \xrightarrow[170^\circ\text{C}]{\text{Conc. H}_2\text{SO}_4} \text{X}$ in the reaction X is-----

- A. $(\text{CH}_3)_2\text{C} = \text{CHCH}_3$
 (b) $\text{CH}_3\text{C} = \text{CH}$
 (c) $(\text{CH}_3)_2\text{CHCH}_2\text{CH}_3$
 (d) $\text{CH}_3 - \text{CH}_2 - \underset{\text{CH}_3}{\underset{|}{\text{C}}} = \text{CH}_2$

42. Propanone on reaction with alkyl magnesium bromide followed by hydrolysis will produce

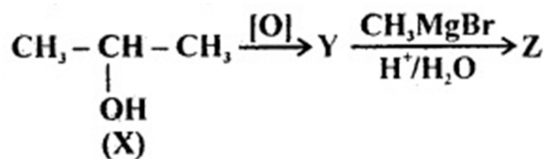
- (a) primary alcohol
 (b) secondary alcohol
 (c) **tertiary alcohol**
 (d) carboxylic acid

43. The suitable reagent for the conversion of $\text{RCH}_2\text{OH} \rightarrow \text{RCHO}$ is

- (a) **$\text{K}_2\text{Cr}_2\text{O}_7$**

- (b) CrO_3
- (c) KMnO_4
- (d) O_2

44. In the following reaction sequence Z is



- a) butan-1-ol
- b) butan-2-ol
- c) **2-methylpropan-2-ol**
- d) 1, 1-dimethylethanol

45. Which of the following alcohols gives 2-butene on dehydration by conc. H_2SO_4 ?

- (a) 2-methyl propene-2-ol
- (b) 2-methyl 1 -propanol
- (c) **Butan-2-ol**
- (d) Butane 1-ol

46.. Which of the following reagents cannot, be used to oxidise primary alcohols to aldehydes?

- (a) CrO_3 in anhydrous medium
- (b) **KMnO_4 in acidic medium**
- (c) Pyridinium chlorochromate
- (d) Heat in the presence of Cu at 573 K

47. Strength of an acid depends on

- a) hydrolysis
- b) concentration of OH^- ions
- c) **concentration of H^+ ions**
- d) no. of moles of base used for neutralisation

48. Which of the following are Lewis acids?

- a) PH_3 and BCl_3
- b) AlCl_3 and SiCl_4
- c) PH_3 and SiCl_4
- d) **BCl_3 and AlCl_3**

49. What is the conjugate base of OH^- ?

- a) O_2
- b) H_2O
- c) O^-
- d) **O^{2-}**

50. Which of the following aqueous solution will be the best conductor of electricity?

- a) NH_3
- b) CH_3COOH
- c) **HCl**
- d) $\text{C}_6\text{H}_{12}\text{O}_6$

51. Find the conjugate acid of NH_2^-

- a) **NH_3**
- b) NH_4OH
- c) NH_4^+
- d) NH_2^-

52. Amines behave as

- a) Lewis acids
- b) **Lewis base**
- c) aprotic acid
- d) neutral compound

53. Which of the following does not show resonance effect?

- a) Benzene
- b) Toluene
- c) Aniline
- d) **Dimethylamine**

54. An isomer of ethanol is-----

- a) Methanol
- b) **Dimethyl ether**
- c) Diethyl ether
- d) Ethylene glycol

55. Organic reaction are slow because these reactions are _____

- a) Ionic
- b) Non ionic
- c) **Between covalent compounds**
- d) Accompanied by side reaction

56. Electromeric effect is due to-----

- a) Electronegative elements
- b) Double bonds
- c) Triple bond
- d) **All of these**

57. Methane reacts with excess of chlorine in presence of diffused sunlight to give

- a) Chloroform
- b) **Carbon tetra chloride**
- c) Methyl chloride
- d) Methylene chloride

58. Saturated hydrocarbon mainly undergo---

- a) Addition reaction
- b) Substitution reaction**
- c) Elimination reaction
- d) Polymerisation

59. Which hydrocarbon is formed by action of sodium on iodoethane?

- a) Methane
- b) Ethane
- c) Ethene
- d) Butane**

60. 1,4-dibromobutane on reaction with Zn in the presence of NaI catalyst forms

- a) Cyclopentane
- b) Cyclobutane**
- c) 1,3-butadiene
- d) Cyclopropane

61. Haloalkanes are _____ derivative of alkane

- a) Halogen**
- b) Hydroxy
- c) Carboxyl
- d) Chloro

62. But-1-ene on treatment with HBr forms

- a) Sec-butyl bromide**
- b) Isobutyl bromide
- c) 1-bromobutane
- d) 2-butyl bromide

63. Propene undergoes addition of Br₂ to give

- a) 1-bromobutane
- b) 2-bromobutane
- c) 1,2-dibromobutane**
- d) 2-bromopropane

64. Which of the following are not examples of gem. Dihalides

- a) 2,2-Dichloropropane
- b) 2,2-dibromobutane
- c) 1,2-dichlorobutane**
- d) 3,3-dibromopentane

65. Which of the following is a tertiary alcohol halide

- a) CH₃-CH₂-CH₂-CH₂-CH(OH)-CH₃
- b) CH₃-CH₂-CH₂-OH
- c) (CH₃)₃C(OH)**
- d) (CH₃)₂CH-CH₂-OH

66. The primary alcohol can be obtained by the action of RMgX with

- a) Formaldehyde**
- b) Acetaldehyde

- c) Acetone
 - d) Water
67. A tertiary alcohol can be prepared obtained when RMgX reacts with __ - ____
- a) Ethanol
 - b) Ethanal
 - c) Propanal
 - d) Propanone**
68. Alkene are prepared from alcohols by
- a) Oxidation
 - b) Hydration**
 - c) Reduction
 - d) Addition
69. Ethers are the alkoxy derivatives of _____
- a) Alkanes**
 - b) Alkenes
 - c) Alcohols
 - d) Aldehydes
70. In continuous etherification process alcohol is reacted with
- a) Dil H_2SO_4
 - b) Dil HCl
 - c) Conc. H_2SO_4**
 - d) Conc.HCl
71. In the reaction of an ether with Hot HI, two same products are obtained then the ethers may be,
- a) Symmetrical**
 - b) Unsymmetrical
 - c) Both symmetrical
 - d) and unsymmetrical
 - e) None of the above
72. In the hydrolysis of ethers the H_2SO_4 acts as,
- a) Hydrolysis agents
 - b) Dehydrating agents**
 - c) Catalyst
 - d) Oxidizing agents
73. Methoxy methane on reaction with cold HI forms
- a) CH_3I only
 - b) CH_3OH and CH_3I**
 - c) CH_3OH and H_2O
 - d) CH_3I and H_2O
74. ethers reacts with cold conc, H_2SO_4 to form
- a) Oxonium salts
 - b) Alkenes
 - c) Alkoxides**

d) Zwitter ions

75. Diethyl ethers on heating with excess conc. HI gives

- a) Iodomethane
- b) 2-Iodo propane
- c) **Iodo ethane**
- d) 1-iodo propane

76. The strength of an acid is depending on is-

- a) Acidity
- b) Basicity
- c) **Degree of dissociation**
- d) Molecular weight

77. From the following acids, which are dibasic acids?

- a) HCl
- b) **H₂SO₄**
- c) HClO₄
- d) HNO₃

78. Oswalds dilution law is applicable to

- a) NH₄OH
- b) NH₄Cl
- c) **CH₃COONa**
- d) NH₄NO₃

79. pH of the solution is mathematically expressed as

- a) Log(H⁺)
- b) -Log(H⁺)
- c) Log 1/(H⁺)
- d) POH-14
- e) **Both b and c**

80. If the concentration of an acid is increased, its pH is

- a) Increases
- b) **Decreases**
- c) Remain same
- d) No change

81. On dilution of buffer solution, its pH

- a) Increased
- b) Decreased
- c) **Remain same**
- d) None of these

82. An aqueous solution whose pH=0, is

- a) Acidic
- b) Basic
- c) **Neutral**
- d) Amphometric

83. the Ph of neutral solution is

- a) 0
- b) 7**
- c) 4
- d) 8

84. the buffer solution is

- a) Which resist change in pH**
- b) Increase pH
- c) Decrese pH
- d) None of these

85. the shape of XeF₂ molecule is

- a) Linear**
- b) Pyramidal
- c) Square planner
- d) Angular

86. the bond angle of F-Cl-F in ClF₃ molecule is

- a) 90°
- b) 104.5°
- c) 109.5°
- d) 87.5°**

87. which one of the following has pyramidal structure

- a) NH₃**
- b) H₂O
- c) SF₄
- d) BF₃

88. The hybridisation of S in SF₄ is

- a) sp³
- b) sp²
- c) sp³d**
- d) none

89. which is planar in structure

- a) XeF₄**
- b) NH₃
- c) XeF₂
- d) H₂O

90. Which of the following contains one lone pair of electron on central atoms

- a) ClF₃
- b) NH₃**
- c) XeF₂
- d) H₂O

91. the geometry of IF_7 molecule is
a) **Pentagonal bipyramidal**
b) Angular
c) Octahedral
d) Square pyramidal
92. In XeF_2 the number of lone pair on Xe is
a) 1
b) 2
c) **3**
d) 4
93. the molecule having three lone pairs and two bond pairs
a) IF_5
b) **XeF_2**
c) XeF_4
d) ClF_3
94. The molecule involving sp^3d hybridisation is
a) BF_3
b) SF_6
c) **PF_5**
d) IF_7
95. Which of the following molecule is linear
a) IF_5
b) SnCl_2
c) BeF_3
d) **BeF_2**
96. The geometry of H_2O molecule is
a) Tetrahedral
b) **Angular**
c) Pyramidal
d) Planar triangle
97. the molecule having three lone pairs and two bond pairs is
a) IF_5
b) **XeF_2**
c) XeF_4
d) ClF_3
98. The K_w is called as
a) Dissociation constant
b) Ionisation constant
c) **Ionic product of water**
d) Solubility constant
99. Monobasic acid has
a) **One H^+ ion**
b) One OH^- ion

- c) Two H^+ ions
- d) Two OH^- ions

100. VSEPR stands for

- a) Valence shell electron pair reduction theory
- b) Valence sublevel electron pair rejection theory
- c) **Valence shell electron pair repulsion theory**
- d) Valence shell electron pair repetition theory

BEST OF LUCK
