



STARS ENTRY TEST SYSTEM-2021

(PMC -NMDCAT)

(CHEMISTRY)

Test Code: C-4 (ALDEHYDES AND KETONES)

Time Allowed: 50 min

1. The first step in the mechanism of addition of 2,4-DNPH to carbonyl compounds is
 - A. Attack of 2,4-DNPH
 - B. Removal of water
 - C. Protonation of carbonyl group
 - D. Proton transfer
2. Both Ethanol and Acetaldehyde produce the same visual change with
 - A. Acid dichromate
 - B. Sodium metal
 - C. Tollen's reagent
 - D. 2, 4-DNPH
3. Propanone does not react with Benedict's solution because
 - A. it is a readily oxidisable specie
 - B. it is resistant to oxidation
 - C. Benedict's solution is powerful oxidizing agent
 - D. it has an aldehyde group
4. All of the followings react with mild oxidizing agents except
 - A. HCHO
 - B. CH₃CHO
 - C. CH₃CH₂CHO
 - D. CH₃COCH₃
5. In a base catalyzed reaction of carbonyl compounds, the base increases
 - A. Nucleophilic character of reagent
 - B. Acidic character of reagent
 - C. Electrophilic character of substrate
 - D. Positive charge on Carbonyl Carbon
6. Which of the following reagent is used to identify aldehydes and methyl ketones
 - A. Fehling's solution
 - B. Sodium bisulphite
 - C. Tollen's Reagent
 - D. Sodium nitroprusside
7. A mixture of Calcium formate and Calcium acetate upon dry distillation forms
 - A. Formaldehyde
 - B. Acetaldehyde
 - C. Acetone
 - D. Ethanol
8. Propionaldehyde and acetone show isomerism
 - A. Chain isomerism
 - B. Positional isomerism
 - C. Functional group isomerism
 - D. Metamerism
9. Which of the following pairs give iodoform test?
 - A. Methanol and ethanal
 - B. Methanol and ethanol
 - C. Ethanal and propanal
 - D. Ethanal and Ethanol
10. Aldehydes are obtained by
 - A. Hydrolysis of esters
 - B. Oxidation of primary alcohols
 - C. Oxidation of secondary alcohols
 - D. Reaction of Hydrogen gas with alcohols
11. Which of the following reacts with both aldehydes and ketones?
 - A. Fehling's solution
 - B. Tollen's reagent
 - C. Hydrazine/H⁺
 - D. I₂ / NaOH
12. Which of the following is oxidized to an aldehyde containing same number of carbons?
 - A. 1-propanol
 - B. 2-methyl-2-Propanol
 - C. 2-Propanol
 - D. Phenol
13. Which of the following will not give yellow precipitate with I₂/NaOH?
 1. Formaldehyde
 2. Ethanol
 3. Acetaldehyde
 4. Methanol
 - A. 1, only
 - B. 1, 2
 - C. 3, 4
 - D. 1, 4
14. Which one of the following reagents will form orange or yellow ppt. with benzaldehyde?
 - A. Sodium nitroprusside
 - B. 2, 4-dinitrophenylhydrazine
 - C. Aqueous diamminesilver(I) ions
 - D. Sodium bisulphite

15. Iodoform test identifies?
 A. Formyl group
 B. Acetyl Group
 C. Carbonyl group
 D. Benzyl Group
16. $\text{CH}_3\text{CH}_2\text{CHO}$ has
 A. Primary carbons only
 B. Primary, secondary and tertiary alcohols
 C. Primary and secondary carbons only
 D. Secondary and tertiary carbons only
17. How many primary carbons are there in 2-Methylpentanal?
 A. 4
 B. 6
 C. 3
 D. 1
18. Catalyst used for the industrial preparation of formaldehyde is
 A. Iron oxide and Cu
 B. Molybdenum and Copper
 C. Iron oxide and Molybdenum oxide
 D. Platinum and Silver
19. An example of α,β -unsaturated compound is:
 A. Crotonaldehyde
 B. Butyraldehyde
 C. 2-Hydroxybutanoic acid
 D. Butanoic acid
20. Polymerization of formaldehyde follows the mechanism:
 A. Acid catalyzed electrophilic addition
 B. Base catalyzed electrophilic addition
 C. Acid catalyzed nucleophilic addition
 D. Base catalyzed nucleophilic addition
21. The carbonyl group consists of one sigma bond and one pi bond between C and O atoms. The sigma bond is formed by the overlap of _____ orbitals of C and O?
 A. p_z-p_z
 B. p_x-p_x
 C. sp^3-sp^3
 D. sp^2-sp^2
22. Which of the followings is the easiest to oxidise
 A. Ethane
 B. Ethanol
 C. Ethanoic acid
 D. Ethanal
23. Ketones show tautomerism with
 A. Aldehydes
 B. Amino acids
 C. Esters
 D. Enols
24. Number of alpha-carbons in formaldehyde are
 A. 1
 B. 2
 C. 3
 D. Zero
25. Acetaldehyde reacts with basic iodine solution to give
 A. ethanol
 B. Sodium formate
 C. acetal
 D. Sodium acetate
26. By which reaction ketone is converted into hydrocarbons?
 A. H_2/Ni
 B. Cannizzaro reaction
 C. Clemmensen reduction
 D. Aldol condensation
27. Acetaldehyde can be prepared by the ozonolysis of
 A. Ethene
 B. 1-butene
 C. 2-butene
 D. 2,3-dimethyl butane
28. The Acetaldehyde cyanohydrin molecule lacks which of the following hybridized carbons
 A. sp^3
 B. sp^2
 C. dsp^2
 D. sp, sp^3
29. In aldol condensation, the side product is
 A. Water
 B. Ammonia
 C. Carbon dioxide
 D. None
30. The electrophile in haloform reaction is
 A. Carbonyl C
 B. Carbonyl O
 C. Halogen
 D. alpha-H
31. The IUPAC name of acetone is _____.
 A. Propanal
 B. Propanone
 C. 2-Propanone
 D. Butanone
32. First step involved in the mechanism of Cannizzaro's reaction is _____.
 A. Nucleophilic attack of Hydride ion
 B. Nucleophilic attack of O^-
 C. Nucleophilic attack of OH^-
 D. Electrophilic attack of OH^-

33. Fehling solution is
 A. An oxidizing agent
 B. A reducing agent
 C. Test solution for ketones
 D. Test solution for alcohols
34. The main source of H^- ion in borohydride reduction is
 A. NaOH
 B. CH_2O
 C. BH_4^-
 D. Water
35. Necessary condition for oxidation of alcohols is?
 A. Beta-carbon
 B. Alpha-hydrogen
 C. Beta-hydrogen
 D. Two hydroxyl groups
36. The carbon that forms iodoform in iodoform test for acetaldehyde is
 A. Carbonyl C
 B. Nucleophilic C
 C. Alpha-C
 D. Partial negative C
37. Maximum number of alpha-hydrogens are found in?
 A. Formaldehyde
 B. Acetaldehyde
 C. Acetone
 D. Acetophenone
38. All of these give Cannizaro's reaction except
 A. Benzaldehyde
 B. Acetaldehyde
 C. Trimethylacetaldehyde
 D. Formaldehyde
39. Which of the following alcohols cannot be produced by reduction of aldehydes or ketones:
 A. Primary alcohol
 B. Secondary alcohol
 C. Tertiary alcohol
 D. Methanol
40. Symmetrical ketones cannot have Carbons:
 A. 4
 B. 3
 C. 5
 D. 7
41. Which test is not used as identification of aldehydes:
 A. Tollen's test
 B. Benedict's test
 C. Nitroprusside test
 D. Fehling's test
42. Cannizaro's reaction occurs in the presence of:
 A. Strong base
 B. Weak base
 C. Strong acid
 D. Weak acid
43. The I.U.P.A.C name of crotonaldehyde is:
 A. Propenal
 B. 2-Butenal
 C. Butan-2-ene-1-al
 D. None
44. One mole of an organic compound requires 0.5 mole of oxygen to produce on acid. The compound may be:
 A. Alcohol
 B. Ketone
 C. Ether
 D. Aldehyde
45. C-atom in a carbonyl group acts as a/an:
 A. Nucleophilic centre
 B. Electrophilic centre
 C. Neutral atom
 D. Chiral centre
46. The product of reduction of butanone with sodium borohydride is:
 A. Methanol
 B. Ethanol
 C. 2-propanol
 D. 2-butanol
47. Acetals are also categorized as:
 A. esters of aldehydes
 B. Polyesters
 C. Ketals
 D. Polyethers
48. Formation of acetals takes place in the presence of?
 A. Sulphuric acid
 B. Dry HCl
 C. Moist HCl
 D. NaOH
49. Dry distillation of Calcium acetate forms.
 A. Formaldehyde
 B. Acetone
 C. Ethanol
 D. Calcium hydroxide
50. Aldol condensation is given by aldehydes and ketones with?
 A. β -methyl groups
 B. β -methylene groups
 C. α -Hydrogen
 D. no α -Hydrogen

TESTS ARE THE BEST FOR YOUR TEST