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كيمياء عضويه صيدلانيه1-الأول-علوم صيدلانية-كلية الصيدلة-درجة الامتحان(75)

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1) Which functional group is characteristic of alcohols?
   1) - - A) -COOH
   2) + - B) -OH
   3) - - C) -NH2
   4) - - D) -CHO
2) Which of the following compounds is an ester?
   1) + - A) CH3COOCH2CH3
   2) - - B) CH3CHO
   3) - - C) CH3COOH
   4) - - D) CH3NH2
3) What is the IUPAC name for the compound with the structure CH3 -CH2-CH2-COOH?
   1) - - A) Propanoic acid
   2) + - B) Butanoic acid
   3) - - C) Acetic acid
   4) - - D) formic acid
4) The reaction of carboxylic acids with alcohols catalysed by conc. H2SO4 is called _____
   1) - a) Dehydration
   2) - b) Oxidation
   3) + c) Esterification
   4) - d) Neutralization
5) Why do halogenated hydrocarbons have a prolonged biological half-life?
   1) - A) They are highly water-soluble.
   2) + B) They are lipid-soluble
   3) - b) Short half life
   4) - c) None of the above
6) They are the only attractive forces present in nonpolar compounds.
   1) - a. Covalent bond
   2) + b. Van der Waals attraction
   3) - c. Dipole dipole attraction
   4) - d. Hydrogen bond
7) When an amine accepts a proton, what type of compound is formed?
   1) - A)An alcohol
   2) - B) carboxylic acid
   3) + C) salt
   4) - D) ether
8) In the dealkylation reaction, what happens to the amine?
   1) - A) It is converted from a primary amine to a tertiary amine.
   2) + B) It loses an alkyl group and is converted from a tertiary amine to a secondary amine, and then to a primary amine.
   3) - C) It forms an ether.
   4) - D) It remains unchanged.
9) What is the general structure of an oxime?
   1) + A) R1R2C=N-OH
   2) - B) R1R2C=O
   3) - C) R1R2C-O-R'

4) - D) R1R2C-NH2

10) Esters are commonly formed through a reaction between which two types of compounds?
1) + A) Alcohols and carboxylic acids
2) - B) Aldehydes and ketones
3) - C) Amines and alcohols
4) - D) Alkenes and alkynes

11) If a molecule dissolves fully or partially in water, it is said to be
1) + a. hydrophilic
2) - b. lipophilic
3) - c. Hydrophobic
4) - d. all of the above

12) All of the following are polar solvents except:
1) - a.H2O
2) - b.Methanol: CH3OH
3) - c. Acetic Acid: CH3CO2H
4) + d. Cyclohexane: C6H12

13) Which of the following alcohols would be most soluble in water?
1) + a) Propanol
2) - b) Hexanol
3) - c) Pentanol
4) - d) Butanol

14) Ethanol is a useful solvent and is used in many preparations as such solutions of
1) - a. disinfectant
2) - b. mouth washes
3) - c. surgical spirit.
4) + d. all of the above

15) The reaction of carboxylic acids with alcohols catalysed by conc. H2SO4 is called _____
1) - a) Dehydration
2) - b) Oxidation
3) + c) Esterification
4) - d) Neutralization

16) At what concentration does ethanol become most effective for microbial action?
1) - A) >20%
2) - B) >50%
3) + C) >70%
4) - D) >90%

17) When propene (CH_3-CH=CH_2) reacts with HBr, what product is formed?
1) - A) Propane
2) - B) 1-Bromopropane
3) + C) 2-Bromopropane
4) - D) Isopropyl bromide

18) What type of product is formed when alkenes undergo ozonolysis followed by reductive workup?
1) - A) Alcohols
2) - B) Carboxylic acids
3) + C) Aldehydes or ketones
4) - D) Alkanes

19) When an alkene reacts with water in the presence of an acid catalyst, what type of reaction occurs?
1) + A) Addition reaction
2) - B) Elimination reaction

3) - C) Substitution reaction
4) - D) Rearrangement reaction

20) What is the definition of oxidation in organic chemistry?
1) - A) Gain of electrons
2) + B) Loss of hydrogen or gain of oxygen
3) - C) Gain of hydrogen or loss oxygen
4) - D) Loss of oxygen

21) What is hydrolysis?
1) - A) The reaction of a compound with oxygen
2) + B) The reaction of a compound with water
3) - C) The removal of water from a compound
4) - D) The addition of a hydrogen ion to a compound

22) Secondary alcohol will be oxidized to
1) - a. an intermediate aldehyde
2) - b. a carboxylic acid
3) + c. ketone
4) - d. a and b

23) What is the result of amide metabolism?
1) - a) Aldehyde + alcohol
2) + b) Amine + Carboxylic acid
3) - c) Amine + aldehyde
4) - d) None of the above

24) Choose the correct answer from the following :
1) - a) Ketone is not oxidized in the laboratory
2) - b) Ketones are oxidized inside our bodies
3) + c) (1,2) are true
4) - d) (1,2) are false

25) Ozonolysis is a reaction that is performed by:
1) - a) Alkyne + O2
2) - b) Alkane + O3
3) + c) Alkene + O3
4) - d) Aldehyde + O3

26) If a drug is toxic, the body will change it to:
1) + a) High polar
2) - b) Less polar
3) - c) Non-polar
4) - d) None

27) Which of the following bonds is the least polar?
1) - a) C_N
2) + b) C_H
3) - c) C_O
4) - d) C_F

28) The functional group that contains the element sulfur is:
1) + a) Thiol
2) - b) Alcohol
3) - c) Amine
4) - d) None

29) The name for CH3CH2COCH3 is:
1) - a) Dimethyl ketone

2) - b) Acetone
3) + c) 2-butanone
4) - d) 1-butanone

30) What is the product of the reaction between CH3OH and KMnO4?
1) - a. CH3OH
2) - b. CH3COOH
3) + c. HCOOH
4) - d. No reaction

31) Which of the following is more acidic?
1) - a. Cl2CHCOOH
2) - b. ClCH2COOH
3) - c. CH3COOH
4) + d. Cl3COOH

32) Heterolytic cleavage occurs with the following except ?
1) - a. U.V.
2) + b. Heat
3) - c. Sunlight
4) - d. H2O2

33) When a carboxylic acid is reduced, it gives _____.
1) - a. Amide
2) - b. Ester
3) + c. Alcohol
4) - d. None

34) Ketones are prepared by the oxidation of _____.
1) - a. Tertiary alcohol
2) + b. Secondary alcohol
3) - c. All of the above
4) - d. Primary alcohol

35) 1) The metabolism process of esters is:
1) - a) Oxidation
2) - b) Reduction
3) + c) Hydrolysis
4) - d) Decarboxylation

36) According to Markenkove's rule:
1) - a) The poor become rich
2) + b) The poor become poor and the rich become richer
3) - c) The rich become poor
4) - d) None of the above

37) Oxidation of CH3CH=CHCH3 using Ozone give:
1) - a) Ketone
2) + b) Aldehyde
3) - c) Carboxylic acid
4) - d) None

38) Which of the following is tertiary amine ?
1) - a) Di-ethyl amine
2) + b) Tri-methyl amine
3) - c) tri-ethyl alcohol
4) - d) None of the above

39) What is the correct name for NH2-CH2-CH2-CH2-COOH?

1) - a) 2-Amino butanoic acid
2) - b) 3-Amino butanoic acid
3) + c) 4-Amino butanoic acid
4) - d) butanoic acid

40) Which of the following has alph hydrogen results in (+) iodoform?
1) - a) (CH3)3-CO-(CH3)3
2) + b) CH3 CHO
3) - c) H CHO
4) - d) (CH3)3-CHO

41) The Connizzaro reaction is occur in:
1) - a) (CH3)3-COOH
2) - b) CH3 CHO
3) + c) H CHO
4) - d) CH3OH

42) An oxime is an organic compound belonging to imines with the general formula:
1) - a) R1 SO2NH2
2) - b) R-NHNH2
3) - c) NH2-CONH2
4) + d) R2C=N-OH

43) 3ry alcohol + KMnO4 give
1) - A) Carboxylic acids
2) - B) Aldehydes
3) + C) No reaction
4) - D) Ketones

44) Diels-Alder Cycloaddition reaction …. Reaction occure in
1) + A) alkene
2) - B) alkane
3) - C) alcohol
4) - D) All of the above

45) The functional group of aldehyde is
1) - a. O-H group
2) + b. C=O group
3) - c. NH2 group
4) - d. COOH

46) The functional group of amide is
1) + a. R-CONH2 group
2) - b. C=O group
3) - c. NH2 group
4) - d. COOH

47) The functional group of Guanidine is
1) - . A. R-CONH2 group
2) - b. C=O group
3) + c. HNC(NH2)2.
4) - d. COOH

48) Which of the following is a potential effect of sunlight on drugs?
1) - a. Increased stability and prolonged shelf life
2) + b. Decreased potency and activity
3) - c. Enhanced absorption and bioavailability
4) - d. No effect on drug properties

49) Ultraviolet (UV) radiation in sunlight can cause chemical changes in drugs, such as:
1) + a. Formation of free radicals
2) - b. Enhanced solubility
3) - c. Increased drug-drug interactions
4) - d. Preservation of drug potency

50) Which compound is commonly used as a solvent and disinfectant in pharmacy preparations?
1) + a. Alcohol
2) - b. Carboxylic acid
3) - c. Ester
4) - d. Amide

51) Which compound is commonly used in the formulation of topical creams and ointments due to its moisturizing properties?
1) + a. Alcohol
2) - b. alkene
3) - c. Ester
4) - d. Amide

52) Which compound is commonly used in the production of pharmaceuticals as a flavoring agent or fragrance?
1) - a. Alcohol
2) - b. Carboxylic acid
3) + c. Ester
4) - d. Amide

53) Which compound is commonly used in the formulation of lipophilic drugs to enhance their solubility and absorption?
1) - a. Alcohol
2) - b. Carboxylic acid
3) + c. Ester
4) - d. Amide

54) Which type of solvent is diethyl ether?
1) - a. Polar solvents
2) - b. Non-polar solvents
3) + c. Solvents with both polar and non-polar properties
4) - d. Solvents with no charge separation

55) Which type of solvent is carboxylic acid with 8 carbons
1) - a. a.Polar solvents
2) + b. Non-polar solvents
3) - c. Solvents with both polar and non-polar properties
4) - d. Solvents with no charge separation

56) Which of the following functional groups is commonly introduced during drug conversion to improve solubility?
1) - A) Methyl
2) + B) Hydroxyl
3) - C) Fluoro
4) - D) Iodo

57) ?What effect does the addition of a carboxylic acid group (-COOH) have on a drug's properties
1) - A) Increases lipophilicity
2) + B) Increases hydrophilicity
3) - C) Reduces solubility
4) - D) Increases volatility

58) High lipophilicity affects a drug's ability to:

1) + A) Cross cell membranes easily
2) - B) Be excreted in urine
3) - C) Interact with polar solvents
4) - D) Form strong ionic bonds

59) Structural modification is likely to improve membrane permeability?
1) - a. Addition of a polar functional group
2) - b. Conversion of an ester to an amide
3) + c. Introduction of a lipophilic group
4) - d. Adding of a hydrogen bond

60) which structural modification is likely to increase lipophilicity?
1) - a. Addition of a polar functional group
2) + b. Conversion of an alcohol to an ester
3) - c. Removal of a hydrophobic group
4) - d. Conversion of an amine to a carboxylic acid

61) Which intermolecular forces are exhibited by alcohols?
1) + a. Hydrogen bonding,dipole-dipole and Van der Waals attraction
2) - b. Dipole-dipole attraction and Ionic bond
3) - c. Ionic bond and Metallic bond
4) - d. Van der Waals attraction only

62) Which intermolecular forces are present in ketones?
1) - a. Ionic bond and Hydrogen bond
2) + b. Dipole-dipole attraction and Van der Waals attraction
3) - c. Hydrogen bonds only
4) - d. London dispersion forces only

63) What type of bond is primarily responsible for the unique properties of water?
1) - a. Ionic bond
2) - b. Covalent bond
3) + c. Hydrogen bond
4) - d. Van der Waals bond

64) Which of the following statements is true regarding amines?
1) - A) Amines act as acids in aqueous solution.
2) - B) Amines are always neutral compounds.
3) + C) Amines can act as weak bases.
4) - D) Amines do not form salts.

65) Which of the following is a property of carboxylic acids?
1) - A) They are generally weak acids.
2) - B) They can donate protons (H^+) in solution.
3) - C) They can form hydrogen bonds.
4) + D) All of the above.