BRAINWARE UNIVERSITY

Term End Examination 2021 - 22
Programme – Bachelor of Pharmacy
Course Name – Pharmaceutical Organic Chemistry I
Course Code - BP202T
(Semester II)

Time allotted : 1 Hrs.30 Min. **Full Marks : 75**

[The figure in the margin indicates full marks.]

Group-A

(Multiple Choice Type Question) 1 x 75=75

Choose the correct alternative from the following :

(1) Six carbon atoms in hexagon and attached further with hydrogen atom, is molecule of

a) Oxygen
b) Propan
c) Benzene
d) ethene

(2) Which is the following compound show geometrical isomerism?

a) 2-Butene
b) 2-Methyl-2-Butane
c) 1-Pentanol
d) 1,2-Dichloropropane

(3) The shape of a p orbital is

a) oval
b) spherical
c) dumb-bell
d) rectangular

(4) A molecule is said to be chiral

a) if it contains plane of symmetry
b) if it contains centre of symmetry
c) if it cannot be superimposed on its mirror image
d) if it can be superimposed on its mirror image.

(5) Which of the following statements describes an SN2 reaction

a) It is zero order in alkyl halide and second order in nucleophile
b) It is second order in nucleophile
c) It is first order in nucleophile and first order in alkyl halide
d) It is second order alkyl halide

(6) Markonikov addition

a) gives the most stable carbocation
b) gives the least stable carbocation
c) is addition to a carbon atom containing the least hydrogen atom
d) none of these

(7) The reaction in which the simple molecules or monomer units combine to form larger molecule is termed as_____.

a) polymerisation
b) monomerisation
c) isomerisation
d) depolymerisation

(8) Which of the following compounds does not dissolve in conc. H_2SO_4 on warming?

a) n-Hexane
b) Diehyl ether
c) 1-Butane
d) Aniline

(9) Which of the following compound assigned the Octane Number of zero:

a) n-Octane
b) 2,3,3-Trimethylpentane
c) n-Heptane
d) 2,2,4-Trimethylpentane

(10) Bayer's reagent is

a) dilute $KMNO_4$
b) $HCl+ZnCl_2$
c) Br_2 in CCl_4
d) NH_2NH_2

(11) When ethyl chloride reacts with nascent hydrogen, what is the formed product?

a) Methane
b) Propane
c) Butane
d) Ethane

(12) In primary alkyl halides, carbon attached to the halogen atom is further attached to how many carbon atoms?

a) one
b) two
c) three
d) four

(13) Satzeff rule states the_____is formed most readily

a) least substituted alkane
b) most substituted alkane
c) least substituted alkene
d) most substituted alkene

(14) General formula for alcohols is

a) CnH_{2n}
b) $CnH_{2n+1}OH$
c) CnH
d) CH_3

(15) Which of the following gives positive Iodoform test

a) 1-Propanol
b) 2-Pentanone
c) 3-Propanol
d) None of these

(16) Isopropyl bromide reacts with aqueous KOH to give

a) Propene
b) Isopropyl alcohol
c) Propane
d) n-Propyl acohol

(17) The reduction of ketone

a) always gives a primary alcohol
b) always gives a secondary alcohol
c) always gives a carboxylic alcohol
d) always gives a ketal

(18) The appearance of a silver mirror in test indicate the presence of :

a) an aldehyde
b) a ketone
c) an alcohol
d) an alkane

(19) The product formed in Aldol condensation is

a) beta-hydroxy aldehyde or a beta-hydroxy ketone
b) an alpha-hydroxy aldehyde or ketone
c) an alpha, beta unsaturated ester
d) a beta-hydroxy acid

(20) What is the molecular geometry/shape of ammonia?

a) Tetrahedral
b) Trigonal pyramidal
c) Octahedral
d) Square planar

(21) Which amine is not soluble in water?

a) Methylamine
b) Dimethylamine
c) Trimethylamine
d) All of these are water soluble

(22) Acid anhydrides on reaction with primary amines give _____.

a) amide
b) imide
c) secondary amine
d) imine

(23) The Hinsberg's method is used for which of the following?

a) Preparation of primary amines
b) Preparation of secondary amines
c) Preparation of tertiary amines
d) Separation of amine mixtures

(24) Which of the following has the highest nucleophilicity?

a) F^-
b) OH^-
c) CH_3^-
d) NH_2^-

(25) Clemmensen reduction of a ketone is carried out in the presence of which of the following?

a) H_2 and Pt as catalyst
b) Glycol with KOH
c) Zn-Hg with HCl
d) $LiAlH_4$

(26) Lindlar's catalyst is

a) LiAIH 4
b) $Pd/BaSO_4$ in quinoline
c) NH_2NH_2
d) $HCl/ZnCl_2$

(27) Formic acid is obtained when _____.

a) Calcium acetate is heated with conc. H_2SO_4
b) Calciumformate is heated with calcium acetate
c) Glycerol is heated with oxalic acid at 110°C
d) Acetaldehyde is oxidised with $K_2Cr_2O_7$ and H_2SO_4

(28) The basicity of alipahtic amines is stronger than ammonia due to the___of alkyl groups.

a) I^-
b) I^+
c) E^+
d) E^-

(29) The compound which have same molecular formula but different structural formula are called

a) Optical isomer
b) Geometrical isomer
c) Position isomer
d) Structural isomer

(30) Which of the following is a 2° alcohol?

a) 1-Propanol
b) 2-Propanol
c) Cyclohexanol
d) 2-methyl-2-butanol

(31) What is the full form of IUPAC System?

a) International Union of Prodrugs and Applied Chemistry
b) International United Pure and Applied Chemistry
c) International Union of Potent and Applied Chemistry
d) International Union of Pure and Applied Chemistry

(32) Which of the following compound has the functional group – OH

a) 2-butanone
b) 1, 2-ethandiol
c) Nitrobenzene
d) Ethanal

(33) Which of the following is a structural Isomerism?

a) Functional group isomerism
b) Position isomerism
c) Chain isomerism
d) All of the above

(34) In C=C, there is

a) sp3 hybridization
b) sp hybridization
c) sp2 hybridization
d) no hybridization

(35) Rank the following series of atoms in order of INCREASING electronegativity

a) N< O < F < P < As
b) F< O < N < P < As
c) As< P < N < O < F
d) As< P < N < F < O

(36) 2,2,2-trichloroethane-1,1-diol is the IUPAC name of

a) Chloroethane
b) Chloral
c) Chloropicrin
d) Iodal

(37) The name acetic acid originated from the Latin word _____ meaning vinegar.

a) acetum
b) acatam
c) acitam
d) acutam

(38) Select the minimum number of carbon atoms, a molecule must possess so as to be regarded as a higher alkane-such as waxes.

a) 15
b) 16
c) 17
d) 18

(39) An alkane with 6 carbon atoms will have how many hydrogen atoms?

a) 14
b) 11
c) 13
d) 12

(40) The carbon atoms involved in the double bond of an alkene are

a) sp Hybridized
b) sp2 Hybridized
c) sp3 Hybridized
d) none of these

(41) Diel's Alder comes under

a) Cycloaddition
b) Electrocyclic
c) Sigmatropic
d) All of the above

(42) Alkene reacts with ozone to yields ozonide.The process is called-

a) ozonolysis
b) alknonolysis
c) ozonomysis
d) lypolysis

(43) In conjugated dienes, the double bonds are separated by a

a) double bond
b) single bond
c) triple bond
d) carboxylic bond

(44) The _____involves movement of the double bond and functional group from one carbon to another

a) Allylic rearrangement
b) pollylylic rearrangement
c) Aclylic rearrangement
d) aliphatic rearrangement

(45) Markonikov's addition of HBr is not applicable to

a) propane
b) 1-butane
c) 1-pentene
d) 2-butene

(46) LPG(Household cooking gas) is mainly a mixture pf

a) Methane+Ethane
b) Acetylene+O2
c) Butane+Isobutane
d) Acetylene+H2

(47) Which of the following compound assigned the Octane Number of 100:

a) n-Octane
b) 2,3,3-Trimethylpentane
c) n-Heptane
d) 2,2,4-Trimethylpentane

(48) Which C-X bond has the highest bond energy per mole?

a) C-Br
b) C-Cl
c) C-F
d) C-I

(49) Carboacation is formed as intermediate during

a) SN1 reaction
b) SN2 reaction
c) SN1& SN2reaction
d) None of the above

(50) N-propyl bromide on treatment with ethanolic potassium hydroxide produces

a) Propane
b) Propene
c) Propyne
d) Propanol

(51) The order of reactivities of the following alkyl halides for a SN2 reaction is

a) RF > RCl> RBr> RI
b) RF> RBr> RCl> RI
c) RCl> RBr> RF > RI
d) RI > RBr> RCl> RF

(52) Lucas reagent is

a) HCl/NaNO2
b) H2/Pd
c) HCl/ZnCl2
d) H2/Pd/BaSO4

(53) Rectified spirit is

a) 100% ethanol
b) 90% ethanol
c) 100% methanol
d) 95% ethanol

(54) Grain alcohol is another name for

a) Methyl alcohol
b) Isopropyl alcohol
c) Ethyl alcohol
d) n-Propyl alcohol

(55) _____alcohol oxidise to aldehyde and then to acids.

a) Primary
b) Secondary
c) Tertiary
d) None of these

(56) Grignard reagent is

a) benzyl chloride
b) alkyl magnesium halide
c) alkyl magnesium sulphide
d) sodiumsulphocyanide.

(57) A hydrazone will result from the reaction of hydrazine with

a) a phenol
b) an aldehyde
c) an alcohol
d) An acid

(58) Which one of following not take place in Cannizzaro reaction?

a) Formaldehyde
b) Trimethyl acetaldehyde
c) Acetaldehyde
d) Benzaldehyde

(59) The Oxo process is also known as_____.

a) hydraformation
b) hydroformation
c) lepoformation
d) dehydroformation

(60) As per IUPAC nomenclature,aldehyde named as _____.

a) alkenals
b) alkanals
c) alkynals
d) None of these

(61) 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

(62) The compound which forms acetaldehyde when heated with dilute NaOH is

a) 1 chloro ethane
b) 1, 1 dichloro ethane
c) 1, 2 dichloro ethane
d) 1, 1, 1 trichloro ethane

(63) Which of the following statements concerning aldehydes and ketones is correct?

a) Cyclic aldehydes, but not cyclic ketones, exist.
b) Cyclic ketones, but not cyclic aldehydes, exist.
c) Both cyclic aldehydes and cyclic ketones exist.
d) Neither cyclic aldehydes nor cyclic ketones exist.

(64) The simplest aldehyde and ketone contain, respectively, how many carbon atoms?

a) 1 and 1
b) 1 and 3
c) 2 and 2
d) 2 and 3

(65) Which of the following statements concerning the oxidation of aldehydes and ketones is correct?

a) Aldehydes readily undergo oxidation and ketones are resistant to oxidation.
b) Ketones readily undergo oxidation and aldehydes are resistant to oxidation.
c) Both aldehydes and ketones readily undergo oxidation.
d) Both aldehydes and ketones are resistant to oxidation.

(66) A hemiacetal is a compound in which

a) hydroxy group and an alkoxy group are attached to the same carbon atom.
b) hydroxyl group and an alkoxy group are attached to adjacent carbon atoms.
c) twoalkoxy groups are attached to the same carbon atom.
d) twoalkoxy groups are attached to adjacent carbon atoms.

(67) The structural difference between a hemiacetal and an acetal is the replacement of a

a) –OH group with an –OR group
b) H atom with an –OR group.
c) H atom with a –OH group.
d) –OR group with a –OH group

(68) Which of the following statements concerning a carbonyl group is incorrect?

a) It is polar.
b) It contains two oxygen atoms and one carbon atom.
c) It is present in both aldehydes and ketones.
d) more than one correct response

(69) Lindlar's catalyst is

a) LiAlH 4
b) .Pd/BaSO4 in quinoline
c) NH 2NH 2
d) HCl/ZnCl2

(70) Acetic acid is manufactured by the fermentation of which of the following chemical?

a) Ethanol
b) Methanol
c) Ethanal
d) Methanal

(71) Which of the following gives benzoic acid on oxidation?

a) Chlorophenol
b) Chlorotoluene
c) Chlorobenzene
d) Benzyl chloride

(72) Which of the following is the strongest acid?

a) CH3COOH
b) ClCH2COOH
c) CH3CH2COOH
d) FCH2COOH

(73) Which of the following is most basic?

a) Ammonia
b) Methylamine
c) Dimethylamine
d) Trimethylamine

(74) The aromatic primary amines reacts with nitrous acid yield_____.

a) diazonium salts
b) tiazonium salts
c) tetrazonium salts
d) tauzonium salts

(75) In Hofman s mustard oil reaction, the _____ on heating with carbon disuphide and mercuric chloride yield isothiocyanate of pungent odour.

a) Primary amines
b) Secondary amines
c) Tertiary amines
d) None of these