



BRAINWARE UNIVERSITY

Term End Examination 2021 - 22

Programme – Bachelor of Pharmacy

Course Name – Pharmaceutical Organic Chemistry III

Course Code - BP401T

(Semester IV)

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) Which among the following correctly defines Diastereomer?

a) These have same magnitude but different signs of optical rotation	b) Nonsuperimposable object mirror relationship
c) These differ in all physical properties	d) Separation is very difficult
- (2) Which of the following compounds will exhibit cis-trans isomerism?

a) 2-butene	b) 2-butyne
c) 2-butanol	d) butanal
- (3) An isomer of ethanol is:

a) methanol	b) diethyl ether
c) acetone	d) dimethyl ether
- (4) How many optically active stereoisomers are possible for butane-2,3-diol?

a) 1	b) 2
c) 3	d) 4
- (5) Which of the following hydrocarbons does not have isomers?

a) C_7H_{16}	b) C_6H_{14}
c) C_5H_{10}	d) C_3H_8
- (6) How many aromatic isomers of dibromobenzene exist?

a) 2	b) 3
c) 4	d) 6
- (7) Which of the following does NOT exhibit geometric isomerism?

a) 1-hexene	b) 2-pentene
c) 3-hexene	d) 2-hexene
- (8) Which of the following compounds displays optical isomerism?

- a) Furfural
- c) Pyrrole

- b) Furoic acid
- d) Pyridine

(23) Nitration of pyrrole is best carried out using:

- a) acetyl nitrate
- c) nitric acid

- b) concentrated nitric acid and sulphuric acid
- d) ammonium nitrate

(24) Electrophilic substitution in furan usually occurs at:

- a) the O atom
- c) both C(2) and C(3) atom

- b) the C(2) atom
- d) the C(3) atom

(25) Imidazole reacts with Hydrogen peroxide to give _____

- a) Oxamide
- c) Oxime

- b) Oxazole
- d) Oxalic Acid

(26) Imidazole is used as a _____

- a) Antihypertensive
- c) Antacid

- b) Diuretic
- d) Antipyretic

(27) Thiazole reacts with Grignard's Reagent to produce _____

- a) 2-alkyl thiazole
- c) 5-alkyl thiazole

- b) 4-alkyl thiazole
- d) 3-alkyl thiazole

(28) Thiazole moiety is a crucial part of _____

- a) Vitamin A
- c) Vitamin B1

- b) Vitamin B2
- d) Vitamin B12

(29) Boiling point of Oxazole is _____

- a) 89⁰ C
- c) 29⁰ C

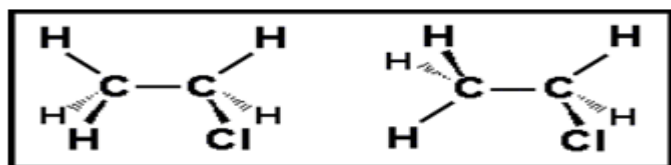
- b) 69⁰ C
- d) 109⁰ C

(30) Identify the chiral molecule among the following:

- a) Isopropyl alcohol
- c) 1-bromo 3-butene

- b) 2-pentanol
- d) Isobutyl alcohol

(31) **What is the relationship between the structures shown?**



- a) structural isomers
- c) conformational structures

- b) geometric isomers
- d) optical isomers

(32) Two isomeric forms of a saturated hydrocarbon

- a) have the same structure
- c) have the same molecular formula

- b) have different compositions of elements
- d) have a different content of the isotopes of hydrogen

(33) Which one of the following compounds is an isomer of CH₃CH₂CH₂CH₂OH?

- a) CH₃CH₂CH₂OH
- c) CH₃CH₂CH₂CH₃

- b) CH₃CH(OH)CH₃
- d) none of them

(34) Meso-Tartaric acid is-

- a) sometimes optically active
c) sometimes optically inactive
- b) always optically active
d) always optically inactive
- (35) Plane polarized light is affected by
a) Identical molecules
c) Chiral molecule
- b) All polymers
d) All biomolecules
- (36) Alkenes show geometrical isomerism due to
a) Asymmetry
c) Resonance
- b) Rotation around a single bond
d) restricted Rotation around a double bond
- (37) Which of the following compounds may exist as cis trans isomers
a) 1-Butene
c) Cyclopropane
- b) 2-Butene
d) Acetone
- (38) Geometric isomerism is shown by
a) Lactic acid
c) 1-Butene
- b) Maleic acid
d) 1,1-Dichloroethylene
- (39) The isomer of diethyl ether is
a) $(\text{CH}_3)_2\text{CHOH}$
c) $\text{C}_3\text{H}_7\text{OH}$
- b) $(\text{CH}_3)_3\text{C}-\text{OH}$
d) $(\text{C}_2\text{H}_5)_2\text{CHOH}$
- (40) Which of the following compounds may not exist as enantiomers
a) $\text{CH}_3\text{CH}(\text{OH})\text{CO}_2\text{H}$
c) $\text{C}_6\text{H}_5\text{CH}_2\text{CH}_3$
- b) $\text{CH}_3\text{CH}_2\text{CH}(\text{CH}_3)\text{CH}_2\text{OH}$
d) $\text{C}_6\text{H}_5\text{CHClCH}_3$
- (41) Which one of the following objects is achiral?
a) Letter P
c) Ball
- b) Letter F
d) A pair of hand
- (42) Which of the following five membered rings is most resonance stabilized?
a) Furan
c) Pyrrole
- b) Thiophene
d) Pyridine
- (43) What is the dipole moment of the pyridine?
a) Zero
c) 1.17 D
- b) 2.2 D
d) 4.3 D
- (44) How many number of resonating structure stabilises a pyridine molecule?
a) 4
c) 6
- b) 5
d) 7
- (45) The N-atom in Pyrrole is----
a) Sp^3 hybridized
c) Sp hybridized
- b) Sp^2 hybridized
d) None of these
- (46) What is the correct order of reactivity (most reactive first) of pyrrole, furan and thiophene towards electrophiles?
a) thiophene > pyrrole > furan
c) pyrrole > furan > thiophene
- b) furan > pyrrole > thiophene
d) furan > thiophene > pyrrole
- (47) Pyrrole is an extremely _____
a) Strong Acid
c) Weak Acid
- b) Weak Base
d) Strong Base
- (48) Imidazole reacts with Bromine to give _____
a) 4-tribromo imidazole
- b) 2,4,5-tribromo imidazole

- c) 2-tribromo imidazole
 (49) Imidazole is iodinated only under alkaline condition to produce _____
 a) 2-triiodoimidazole
 c) 2,4,5-triiodoimidazole
 (50) Boiling point of Thiazole is _____
 a) 117 degree C
 c) 17 degree C
 (51) Thiazole react with Sodamide to produce _____
 a) 2-amino thiazole
 c) 5-amino thiazole
 (52) Oxazole is _____
 a) Water immiscible liquid
 c) Partially soluble in water
 (53) Nitration of Oxazole leads to _____
 a) 2-Nitrooxazole
 c) 3-Nitrooxazole
 (54) Pyridine react with ammonia and ethanol to produce _____
 a) 1,3-diaminopyridine
 c) 1,4-dihydropyridine
 (55) Pyridine react with LiAlH_4 to produce _____
 a) 1,2-dihydropyridine
 c) 1,4-dihydropyridine
 (56) All carbon atom in Quinoline are
 a) sp^2 hybridized
 c) sp^3 hybridized
 (57) Quinoline react with H_2SO_4 at 220 degree C to produce _____
 a) Quinoline-8-Sulphonic acid
 c) Quinoline-2-Sulphonic acid
 (58) Quinoline undergo bromination above 500 degree C to produce
 a) 2-bromoquinoline
 c) 6-bromoquinoline
 (59) Quinine is widely used as _____
 a) Antipyretic Drug
 c) Antihypertensive Drug
 (60) Isoquinoline reacts with sodamide in presence of ammonia to produce _____
 a) 1-aminoisoquinoline
 c) 6-aminoisoquinoline
 (61) Isoquinoline is widely used as _____
 a) Anaesthetic
 c) Antipyretic
 (62) Oxidation of isoquinoline with alkaline permanganate solution yields _____
 a) Benzoic acid
 c) Homophthalic acid
 (63) All carbon and nitrogen atom in isoquinoline are
- d) None of them
 b) 5-triiodoimidazole
 d) None of them
 b) 217 degree C
 d) 77 degree C
 b) 4-amino thiazole
 d) None of them
 b) Water miscible liquid
 d) None of them
 b) 4-Nitrooxazole
 d) 5-Nitrooxazole
 b) 2,4-dihydropyridine
 d) 1,4-dimethylpyridine
 b) 2,4-dihydropyridine
 d) None of them
 b) sp hybridized
 d) sp^4 hybridized
 b) Quinoline-4-Sulphonic acid
 d) Quinoline-6-Sulphonic acid
 b) 8-bromoquinoline
 d) 5-bromoquinoline
 b) Antimalarial drug
 d) Antitubercular Drug
 b) 4-aminoisoquinoline
 d) 8-aminoisoquinoline
 b) Anti-inflammatory
 d) Fungicides
 b) Phthalic acid & cinchomeric acid
 d) Oxalic acid

- a) sp² hybridized
c) sp³ hybridized
- b) sp hybridized
d) sp⁴ hybridized
- (64) Acridine react with sodamide to produce _____
a) 2-aminoacridine
c) 6-aminoacridine
- b) 4-aminoacridine
d) 9-aminoacridine
- (65) Indole soluble in _____
a) Cold Water
c) Insoluble in water
- b) Hot water
d) None of them
- (66) Indole ring is formed by _____
a) Benzene and pyrrole
c) Pyrrole & Acridine
- b) Benzene and Pyridine
d) Pyrrole & Pyridine
- (67) Indole react with sulfonyl chloride to produce _____
a) 2- chloroindole
c) 4- chloroindole
- b) 3- chloroindole
d) 5- chloroindole
- (68) The number of tautomers of Pyrazole is _____
a) Three
c) Four
- b) Two
d) Six
- (69) Oxazole used as a _____
a) HIV inhibitor
c) Muscle relaxant
- b) Anti inflammatory
d) All of them
- (70) _____ used as a reducing agent in clemmensen reduction
a) H₂SO₄
c) Hydrazine
- b) Ammonia
d) Amalgamated Zinc & HCl
- (71) Clemmensen reduction is always done for base sensitive _____.
a) Ketone Compound
c) Carbonyl Compound
- b) Methylene Compound
d) Acetylene Compound
- (72) Cyclohexanone react with amalgamated zinc with HCl to produce _____
a) Cycloalkane
c) O-Cresol
- b) Benzene
d) Cycloalkene
- (73) Salicylaldehyde react with zinc and HCl to produce _____.
a) Adipic Acid
c) O-Cresol
- b) Benzaldehyde
d) Cycloalkane
- (74) In Oppenauer oxidation _____ alcohol are oxidised much faster.
a) Secondary
c) Tertiary
- b) Primary
d) Quaternary
- (75) Oppenauer oxidation is used to prepare _____ in the pharmaceutical industry
a) Antihypertensive drug
c) Analgesics
- b) Antipyretic drug
d) Anesthetic drug.