



## 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

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a) 2-Acetyl pyrrole

c) 4-Acetyl pyrrole

b) 3-Acetyl pyrrole

d) 5-Acetyl pyrrole

(22) Furan reacts with ammonia in presence of alumina at  $400^{\circ}\text{C}$  to give

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)  $89^{\circ}\text{C}$

c)  $29^{\circ}\text{C}$

b)  $69^{\circ}\text{C}$

d)  $109^{\circ}\text{C}$

(30) Identify the chiral molecule among the following:

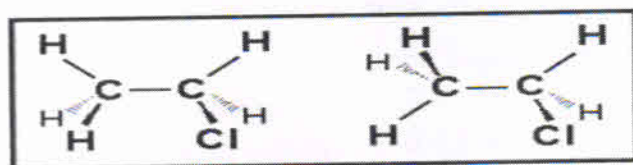
a) Isopropyl alcohol

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

b) have different compositions of elements

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- c) have the same molecular formula  
d) have a different content of the isotopes of hydrogen
- (33) Which one of the following compounds is an isomer of  $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{OH}$ ?  
a)  $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$   
b)  $\text{CH}_3\text{CH}(\text{OH})\text{CH}_3$   
c)  $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_3$   
d) none of them
- (34) Meso-Tartaric acid is-  
a) sometimes optically active  
b) always optically active  
c) sometimes optically inactive  
d) always optically inactive
- (35) Plane polarized light is affected by  
a) Identical molecules  
b) All polymers  
c) Chiral molecule  
d) All biomolecules
- (36) Alkenes show geometrical isomerism due to  
a) Asymmetry  
b) Rotation around a single bond  
c) Resonance  
d) restricted Rotation around a double bond
- (37) Which of the following compounds may exist as cis trans isomers  
a) 1-Butene  
b) 2-Butene  
c) Cyclopropane  
d) Acetone
- (38) Geometric isomerism is shown by  
a) Lactic acid  
b) Maleic acid  
c) 1-Butene  
d) 1,1-Dichloroethylene
- (39) The isomer of diethyl ether is  
a)  $(\text{CH}_3)_2\text{CHOH}$   
b)  $(\text{CH}_3)_3\text{C}-\text{OH}$   
c)  $\text{C}_3\text{H}_7\text{OH}$   
d)  $(\text{C}_2\text{H}_5)_2\text{CHOH}$
- (40) Which of the following compounds may not exist as enantiomers  
a)  $\text{CH}_3\text{CH}(\text{OH})\text{CO}_2\text{H}$   
b)  $\text{CH}_3\text{CH}_2\text{CH}(\text{CH}_3)\text{CH}_2\text{OH}$   
c)  $\text{C}_6\text{H}_5\text{CH}_2\text{CH}_3$   
d)  $\text{C}_6\text{H}_5\text{CHClCH}_3$
- (41) Which one of the following objects is achiral?  
a) Letter P  
b) Letter F  
c) Ball  
d) A pair of hand
- (42) Which of the following five membered rings is most resonance stabilized?  
a) Furan  
b) Thiophene  
c) Pyrrole  
d) Pyridine
- (43) What is the dipole moment of the pyridine?  
a) Zero  
b) 2.2 D  
c) 1.17 D  
d) 4.3 D
- (44) How many number of resonating structure stabilises a pyridine molecule?  
a) 4  
b) 5  
c) 6  
d) 7
- (45) The N-atom in Pyrrole is----  
a)  $\text{Sp}^3$  hybridized  
b)  $\text{Sp}^2$  hybridized  
c)  $\text{Sp}$  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  
 c) 2-tribromo imidazole  
 b) 2,4,5-tribromo imidazole  
 d) None of them
- (49) Imidazole is iodinated only under alkaline condition to produce \_\_\_\_\_  
 a) 2-triiodoimidazole  
 c) 2,4,5-triiodoimidazole  
 b) 5-triiodoimidazole  
 d) None of them
- (50) Boiling point of Thiazole is \_\_\_\_\_  
 a) 117 degree C  
 c) 17 degree C  
 b) 217 degree C  
 d) 77 degree C
- (51) Thiazole react with Sodamide to produce \_\_\_\_\_  
 a) 2-amino thiazole  
 c) 5-amino thiazole  
 b) 4-amino thiazole  
 d) None of them
- (52) Oxazole is \_\_\_\_\_  
 a) Water immiscible liquid  
 c) Partially soluble in water  
 b) Water miscible liquid  
 d) None of them
- (53) Nitration of Oxazole leads to \_\_\_\_\_  
 a) 2-Nitrooxazole  
 c) 3-Nitrooxazole  
 b) 4-Nitrooxazole  
 d) 5-Nitrooxazole
- (54) Pyridine react with ammonia and ethanol to produce \_\_\_\_\_  
 a) 1,3-diaminopyridine  
 c) 1,4-dihydropyridine  
 b) 2,4-dihydropyridine  
 d) 1,4-dimethylpyridine
- (55) Pyridine react with LiAlH<sub>4</sub> to produce \_\_\_\_\_  
 a) 1,2-dihydropyridine  
 c) 1,4-dihydropyridine  
 b) 2,4-dihydropyridine  
 d) None of them
- (56) All carbon atom in Quinoline are  
 a) sp<sup>2</sup> hybridized  
 c) sp<sup>3</sup> hybridized  
 b) sp hybridized  
 d) sp<sup>4</sup> hybridized
- (57) Quinoline react with H<sub>2</sub>SO<sub>4</sub> at 220 degree C to produce \_\_\_\_\_  
 a) Quinoline-8-Sulphonic acid  
 c) Quinoline-2-Sulphonic acid  
 b) Quinoline-4-Sulphonic acid  
 d) Quinoline-6-Sulphonic acid
- (58) Quinoline undergo bromination above 500 degree C to produce  
 a) 2-bromoquinoline  
 c) 6-bromoquinoline  
 b) 8-bromoquinoline  
 d) 5-bromoquinoline
- (59) Quinine is widely used as \_\_\_\_\_  
 a) Antipyretic Drug  
 c) Antihypertensive Drug  
 b) Antimalarial drug  
 d) Antitubercular Drug
- (60) Isoquinoline reacts with sodamide in presence of ammonia to produce \_\_\_\_\_

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a) Secondary

c) Tertiary

(75) Oppenauer oxidation is used to prepare \_\_\_\_\_ in the pharmaceutical industry

a) Antihypertensive drug

c) Analgesics

b) Primary

d) Quaternary

b) Antipyretic drug

d) Anesthetic drug.

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