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Roll No. .....

341451(41)

B. Pharmacy (Fourth Semester) Examination, April-May 2019

(PCI Scheme)

(Pharmacy Branch)

PHARMACEUTICAL ORGANIC CHEMISTRY-III

Theory (BP401T)

Time Allowed : Three hours

Maximum Marks : 75

***Note** : Attempt all the questions. Carefully read the internal choice of questions.*

Section-'A'

(Objective Type Questions) **20×1=20**

***Note** : Attempt all questions. Each question carries 1 mark.*

1. (i) Which of the following statement is false regarding chiral compounds?

(a) Rotate the plane of polarized light

(b) Have cis- and trans-isomers

(c) Exist as enantionmers

(d) Can be detected with a polarimeter

(ii) Which of the following statement is false abo enantiomers :

(a) Are non-superimpsable mirror image

(b) Are superimposable mirror image

(c) Rotate plane of polarized light

(d) Is characterized by all the above

(iii) Which of the following compound will be optically active :

(a) Succinic acid

(b) Meso-tartaric acid

(c) Lactic acid

(d) Chloroacetic acid

(iv) Stereoisomers have different :

(a) Molecular formula

(b) Structrual formula

(c) Configuration

(d) Conformation

(v) Which of the compound show geometrical isomerism?

(a) $(CH_3)_3H$

(b) $CH_3CH=CH_2$

(c) $(CH_3)_2NH$

(d) $CH_3CH=CHCH_3$

(vi) Which of the following compound may exist as trans isomer ?:

(a) 1-Butene

(b) 2-Butene

(c) Cyclopropane

(d) Acetone

(vii) Which of the following conformation has highest stability ?

(a) Gauche

(b) Staggered

(c) Fully eclipsed

(d) Partially eclipsed

(viii) According to Chan-in-Gold which of the following group has highest priority?:

(a) – OH

(b) – H

(c) –COOH

(d) $-H_3C$

(ix) Pyrimidine is an example of :

(a) 6 membered heterocyclic compounds

(b) 7 membered heterocyclic compounds

(c) 5 membered heterocyclic compounds

(d) Condensed heterocyclic compounds

(x) Which of the following reagents will react with furan to form 2-furansulphuric acid :

(a) SO_3 in pyrimidine at 100°C

(b) Dil. H_2SO_4 at 200 °C

(c) SO_2 in pyrimidine at 100°C

(d) Dil. H_2SO_4 at 100°C

(xi) What is the correct order of reactivity of the following towards electrophiles?

(a) Pyrrole > furan > thiophene

(b) Furan > thiophene > pyrrole

(c) Thiophene > pyrrole > furan

(d) Pyrrole > thiophene > furan

(xii) Which of the following compounds can be synthesized by Paal-Knorr synthesis :

(a) Pyrrole

(b) Furan

(c) Thiophene

(d) All of the above

(xiii) Reduction of quinoline with H_2/Pt gives :

(a) 1, 2-Dihydroquinoline

(b) 1, 2, 3, 4-Tetrahydroquinoline

(c) Decahydroquinoline

(d) Nicotinic acid

(xiv) In thiazole and oxazole nucleophile attack at :

(a) C_1

(b) C_2

(c) C_3

(d) C_5

(xv) In indole which of the heterocyclic ring is fused with benzene ring?

(a) Pyrrazole

(b) Imidazole

(c) Isoxazole

(d) Pyrrole

(xvi) Pyridine react with a mixture KNO_3 and H_2SO_4 300°C to give :

(a) 1-Nitropyridine

(b) 2-Nitropyridine

(c) 3-Nitropyridine

(d) 4-Nitropyridine

(xvii) Oppenauer oxidation is the reverse process of :

(a) Wolf-Kishner reduction

(b) Clemmensen reduction

(c) Meerwein Ponndorf Verley reduction

(d) Birch reduction

(xviii) Birch reduction is done by using :

(a) Sodium in ammonia with alcohol

(b) Potassium in ammonia with alcohol

(c) Magnesium in ammonia with alcohol

(d) None of the above

(xix) Backman's rearrangement is useful for synthesis of

(a) Alcohol

(b) Amide

(c) Phenol

(d) Oxime

(xx) Dakin reaction is useful for the synthesis of :

(a) Alcohol

(b) Aldehyde

(c) Phenol

(d) Carboxylic acid

Section-'B'

(Long Answer Type Questions) 2×10=20

Note : Attempt any two questions out of 3 question. Each question carries 10 marks.

2. Define and classify optical isomerism with suitable examples. Discuss in detail about the DL and RS system of nomenclature of optical isomers.

3. Explain the various methods used for the determination of configuration of geometric isomers. Give example of one stereospecific and one stereoselective reaction.

4. What are heterocylic compounds? Write synthesis and important chemical reactions of pyrrole.

Section-'C'

(Short Answer Type Questions) 7×5

Note : Attempt any seven questions out of eight questions. Each question carries 5 marks.

5. Explain reaction mechanism of Beckmann's re-arrangement.

6. Write synthesis and medical use of Quinoline.

7. Explain Birch reduction with example.

8. Write any three synthesis schemes of Imidazole.

9. Explain the basicity of pyrrole.

10. Draw different conformational isomers of n-Butane.

11. What do you understand about racemic modification and resolution of a racemic mixture?

12. Write synthesis an medical uses of Purine.

13. Explain how metal hydrates are use in a chemical reaction.