

**B. PHARM.
FOURTH SEMESTER
PHARMACEUTICAL ORGANIC CHEMISTRY III
BP401T**

**SET
C**

Duration : 3 hrs.

Full Marks : 75

(PART-A: Objective)

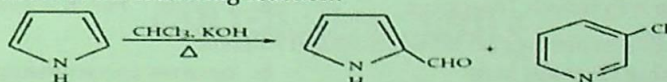
Time : 30 min.

Marks : 20

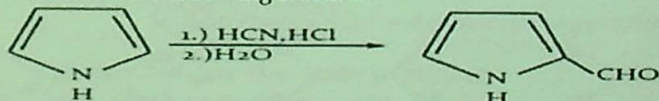
1×20=20

Choose the correct answer from the following:

- If POS is present in one compound, then the compound is
 - Optically active
 - Optically Inactive
 - Diastereomers
 - None of the above
- What is the product when thiophene reacts with Br₂ in benzene?
 - 2-bromothiophene
 - 2,5-bromothiophene
 - 3-bromothiophene
 - 3,4-bromothiophene
- Which of the following solvents is a heterocyclic compound?
 - DMSO
 - DMF
 - THF
 - None
- What is the name of the following reaction?



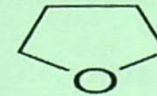
- Gattermann reaction
 - Riemer tiemann reaction
 - Friedal craft reaction
 - Blanc's chloromethylation
- A molecule is said to be chiral
 - if it contains plane of symmetry
 - if it contains centre of symmetry
 - if it cannot be superimposed on its mirror image
 - if it can be superimposed on its mirror image
 - Which of the following is true of any (S)-enantiomer?
 - It rotates plane-polarized light to the right.
 - It rotates plane-polarized light to the left.
 - It is a racemic form.
 - It is the mirror image of the corresponding (R)-enantiomer.
 - What is the name of the following reaction?



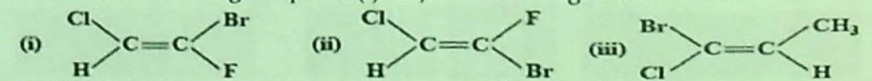
- Gattermann reaction
- Riemer tiemann reaction
- Friedal craft reaction
- Blanc's chloromethylation

8. If the ring size is 3 and the compound is saturated containing nitrogen hetero atom, the suffix will be
- iridine
 - irine
 - inine
 - inane

9. Write the name of this compound



- Pentahydro furan
 - Tetrahydro furan
 - Furan
 - None
10. Boiling point is higher for which form of Geometrical isomers
- Cis Form
 - Trans Form
 - Boiling Point is equal for Cis and Trans
 - None
11. Nitration of pyrrole is best carried out using:
- Acetyl nitrate
 - Ammonium nitrate
 - Concentrated nitric and sulphuric acid
 - Nitric acid
12. Following is the correct order of aromaticity.
- Thiophene > Pyrrole > Furan
 - Thiophene < Pyrrole < Furan
 - Furan > Pyrrole > Thiophene
 - Pyrrole > Furan > Thiophene
13. It is possible to distinguish between optical isomers
- by using chemical tests
 - by mass spectrometry
 - by IR spectroscopy
 - by polarimetry
14. All stereocentre are chiral centre?
- No
 - yes
 - Most of the Stereocentre are chiral centre.
 - None
15. Hantzsch and Wildman nomenclature also known as
- Trivial Nomenclature
 - Systemic Nomenclature
 - Non Systemic Nomenclature
 - None
16. A mixture of equal amounts of two enantiomers _____.
- is called a racemic mixture
 - is optically inactive
 - implies that the enantiomers are meso forms
 - both A and B
17. Which of the following compound(s) has/have 'Z' configuration?

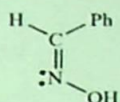


- (i) only
- (ii) only
- (iii) only
- (i) and (iii)

18. If our eyes travel in counter clockwise direction from the ligand of highest priority to the ligand of lowest priority, the configuration is _____

- a. R-Configuration
- b. S-Configuration
- c. E-Configuration
- d. Z-Configuration

19. The following compound is in which form



- a. Z
 - b. E
 - c. Syn-
 - d. Both a and c
20. Geometrical isomer
- a. Also known as Diastereomers
 - b. Areal distance must be different
 - c. Can be separated
 - d. All of the above

(PART-B : Descriptive)

Time : 2 hrs. 30 min.

Marks : 35

[Answer any seven (7) questions]

1. Write the reaction and mechanism involved in Beckmanns Rearrangement. 5
2. Outline the Skraups synthesis of Quinoline with mechanism. 2+3=5
3. Give the methods of synthesis, chemical reactions and uses of Pyrrole 2+2+1=5
4.
 - a. Give the structure and use of Lithium Aluminium hydride 1+1+1+
 - b. Write Chichibabin reaction. 1+1=5
 - c. What are Atropisomerism? Write the example
 - d. Stereospecific reaction with example.
 - e. Define plane of symmetry with example.

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| 5. Define Optical Isomer. Write the rule in nomenclature of optical isomer by D L configuration? | 5 |
| 6. Define conformers with example. Discuss about conformational isomers in Ethane. | 1+4=5 |
| 7. Draw the neat labeled diagram of Polarimeter. Write a note on R S configuration with example. | 2.5+2.5
=5 |
| 8. Explain Aromaticity and Reactivity of Furan, Pyrrole and Thiophene and Draw the Resonance structure of Furan. | 3+2=5 |
| 9. What are Relative and Absolute configuration? Discuss the methods used to determine the configuration of geometrical isomers. | 2+3=5 |

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PART-C: Long type questions
[Answer any two (2) questions]

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| 1. What are heterocyclic compounds? Give their systematic nomenclature and classification with example. | 1+4.5+
4.5=10 |
| 2. What is Racemic modification and Resolution of Racemic modification? Discuss the method of resolution of Racemic modification with example. | 2+8=10 |
| 3. Define geometric isomers and explain the method of nomenclature of geometric isomers. | 1+9=10 |

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