

**B. PHARM.**  
**FOURTH SEMESTER**  
**PHARMACEUTICAL ORGANIC CHEMISTRY III**  
**BP401T [REPEAT]**  
(USE OMR SHEET FOR OBJECTIVE PART)

**SET  
B**

Duration : 3 hrs.

Full Marks : 75

**( PART-A: Objective )**

Time : 30 min.

Marks : 20

Choose the correct answer from the following:

1×20=20

- Compounds which rotate plane of polarized light towards left is known as
  - Dextro - compound
  - Levo- compound
  - Optical- compound
  - Cyclic - compound
- Reagent used for nucleophilic substitution reaction of quinoline
  - NaOH
  - NaNH<sub>3</sub>
  - NaNH<sub>2</sub>
  - NaNH<sub>4</sub>
- Catalytic reduction of quinoline in presence of acetic acid gives?
  - Decahydro quinoline
  - 1,2-Dihydro quinoline
  - 3,4-Dihydro quinoline
  - 1,2,3,4-tetrahydro quinoline
- Reagent used in Birch reduction reaction?
  - Phthalic acid
  - Benzoic acid
  - Li in Liq. NH<sub>3</sub> in ethanol
  - LiAlH<sub>4</sub>
- Oxidation of isoquinoline in presence of KMnO<sub>4</sub> gives?
  - Phthalic acid
  - Phthalic anhydride
  - 1-amino isoquinoline
  - 2-amino quinoline
- IN presence of strong oxidizing agent alcohol gets oxidised to?
  - Aldehyde
  - Carboxylic acid
  - Ketone
  - Ether
- Pyridine is basic in nature due to?
  - Double bond
  - Aromatic sextet
  - Sigma bond
  - Lone pair of electrons
- Nitration of pyrrole yields
  - 2- nitro pyrrole
  - 4- nitro pyrrole
  - 3- nitro pyrrole
  - 5- nitro pyrrole
- Molecular formula of Thiazole
  - C<sub>3</sub>H<sub>4</sub>NS
  - C<sub>3</sub>H<sub>3</sub>NS
  - C<sub>3</sub>H<sub>5</sub>NS
  - C<sub>4</sub>H<sub>4</sub>NS
- Which of the following compound is not a heterocyclic aromatic compound?
  - Naphthalene
  - Pyrrole
  - Furan
  - Pyrimidine

11. Priority order for the heterocyclic compounds is always started from heteroatom-
- |               |               |
|---------------|---------------|
| a. O>N>P>S>Si | b. N>O>P>S>Si |
| c. O>P>N>Si>S | d. O>S>N>P>Si |
12. Furan on reacts with  $\text{CHCl}_3/\text{KOH}$  gives
- |                    |                  |
|--------------------|------------------|
| a. 2- Chloro furan | b. Furfural      |
| c. 2- acetyl furan | d. None of these |
13. Acetylene reacts with  $\text{H}_2\text{S}$  at 673K gives
- |             |              |
|-------------|--------------|
| a. Furan    | b. Thiophene |
| c. Pyridine | d. Pyrrole   |
14. Molecular formula of Pyridine is
- |                                   |                                   |
|-----------------------------------|-----------------------------------|
| a. $\text{C}_4\text{H}_5\text{N}$ | b. $\text{C}_3\text{H}_5\text{N}$ |
| c. $\text{C}_5\text{H}_5\text{N}$ | d. $\text{C}_5\text{H}_4\text{N}$ |
15. Chiral compounds are?
- |                                 |                                      |
|---------------------------------|--------------------------------------|
| a. Super imposable mirror image | b. Non- Super imposable mirror image |
| c. Both                         | d. NOTA                              |
16. Which of the following compound have 2 chiral centres?
- |                  |                    |
|------------------|--------------------|
| a. Lactic acid   | b. 2-butanol       |
| c. Tartaric acid | d. Glyceraldehyde. |
17. Which of the following is not a system of nomenclature for geometrical isomerism
- |              |             |
|--------------|-------------|
| a. Cis-trans | b. DL       |
| c. EZ        | d. Syn-Anti |
18. How many conformational isomers are available for ethane?
- |      |      |
|------|------|
| a. 4 | b. 6 |
| c. 5 | d. 7 |
19. In staggered conformation the torsional strain is --?
- |        |       |
|--------|-------|
| a. 0   | b. 60 |
| c. 120 | d. 90 |
20. Molecular formula of indole is-
- |                                   |                                   |
|-----------------------------------|-----------------------------------|
| a. $\text{C}_8\text{H}_9\text{N}$ | b. $\text{C}_9\text{H}_9\text{N}$ |
| c. $\text{C}_7\text{H}_8\text{N}$ | d. $\text{C}_8\text{H}_9\text{O}$ |

**( PART-B :Descriptive )**

Time : 2 hrs. 30 min.

Marks : 35

*[ Answer any seven (7) questions ]*

- |   |               |
|---|---------------|
| 1. Write a note on Clemmensen reduction reaction.                         | 5             |
| 2. Write the synthesis and medicinal uses of a. Pyrimidine<br>b. Azepines | 2.5+2.5<br>=5 |
| 3. Write a note on synthesis, reaction and medicinal uses of Imidazole.   | 5             |
| 4. Write a note on conformational isomerism in Ethane.                    | 5             |
| 5. Explain the nomenclature of heterocyclic compounds.                    | 5             |
| 6. Write a note on Asymmetric synthesis: Partial and Absolute.            | 5             |
| 7. Explain the method for the determination of Geometrical isomerism.     | 5             |
| 8. Write a note on classification of heterocyclic compounds.              | 5             |
| 9. Write a note on Claisen-Schmidt condensation.                          | 5             |

**PART-C: Long type questions**

*[ Answer any two (2) questions ]*

1. Write a note on pyrrole and Thiophene 5+5=10
  
2. Define the following term with example- 2+2+2+  
a. Isomerism b. Optical isomerism c. Cis/trans isomerism 2+2=10  
d. Chiral and Achiral molecules e. Racemic modification.
  
3. Define atropisomerism? Explain sequence rule for nomenclature 2+8=10  
of geometrical isomerism.

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