

Code No: BP401T

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SET - 1

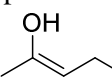
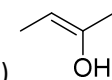
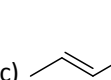
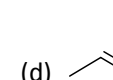
II B. Pharmacy II Semester Regular Examinations, April/May - 2019
PHARMACEUTICAL ORGANIC CHEMISTRY-III

Time: 3 hours

Max. Marks: 75

- Note: 1. Question Paper consists of three parts (**Part-I, Part-II & Part-III**)
 2. Answer ALL (Multiple Choice) Questions from **Part-I**
 3. Answer any **TWO** Questions from **Part-II**
 4. Answer any **SEVEN** Questions from **Part-III**

PART -I

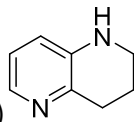
1. (i) In glyceraldehydes, the complete sequence of priority is (1M)
 (a) $-\text{OH} > -\text{CH}_2\text{OH} > -\text{CHO} > -\text{H}$ (b) $-\text{H} > -\text{CH}_2\text{OH} > -\text{CHO} > -\text{OH}$
 (c) $-\text{H} > -\text{OH} > -\text{CH}_2\text{OH} > -\text{CHO}$ (d) $-\text{OH} > \text{CHO} > -\text{CH}_2\text{OH} > -\text{H}$
- (ii) The cis-trans nomenclature is not applicable when (1M)
 (a) The different groups attached to the carbon atom of double bond are same
 (b) Atleast one of the group attached to each carbon atom is same
 (c) The different groups attached to the carbon atom of double bond are not same
 (d) The cis-trans nomenclature is applicable for all compounds
- (iii) What are Stereoisomers? (1M)
 (a) Isomers having a same molecular formula and same configuration
 (b) Isomers having a same molecular formula but different configuration
 (c) Isomers having a different molecular formula but the same configuration
 (d) Isomers having a different molecular formula and different configuration
- (iv) Which of the following statements is *not* true regarding pairs of enantiomers? (1M)
 (a) They rotate plane polarized light in opposite directions
 (b) They have identical melting points
 (c) they react at equal rate with chiral reagents
 (d) they have identical solubility profile
- (v) Which of the following notation is not used to denote enantiomers? (1M)
 (a) R and S (b) E and Z (c) + and - (d) D and L
- (vi) conformer of cyclohexane has maximum internal energy (1M)
 (a) Chair (b) Boat (c) half chair (d) twisted boat
- (vii) Choose the correct option for diastereomers from the following. (1M)
 (a) They are optical isomers
 (b) They are mirror images
 (c) They possess same physicochemical properties
 (d) They cannot be separated by crystallization
- (viii) What is the molecular formula for the alkane of smallest molecular weight which possesses a stereogenic center? (1M)
 (a) C_3H_8 (b) C_5H_{12} (c) C_7H_{16} (d) C_9H_{20}
- (ix) (Z)-pent-2-en-3-ol is (1M)
 (a)  (b)  (c)  (d) 
- (x) Which of the following is not chiral? (1M)
 (a) glyceraldehyde (b) glucose (c) DNA (d) glycine
- (xi) Very strong nucleophilic nitrogen can be seen in (1M)
 (a) Pyridine (b) piperidine (c) pyrrole (d) oxazole



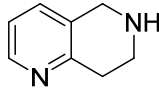
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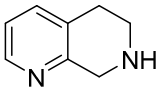
SET - 1

- (xii) Indole undergoes mannich reaction on..... carbon (1M)
(a) C-2 (b) C-3 (c) C-4 (d) C-5
- (xiii) Quinoline undergoes oxidation with $K_2Cr_2O_7/H_2SO_4$ followed by heating (1M)
results in
(a) Dihydroquinoline (b) 2-hydroxyquinoline
(c) Nicotinic acid (d) Phthalic acid
- (xiv) Hydrogenation of Pyridine results in (1M)
(a) Morpholine (b) Pyrrolidine (c) Piperidine (d) Piperazine
- (xv) 5,6,7,8-tetrahydro-1,7-naphthyridine is..... (1M)
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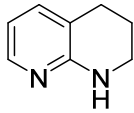
(a)



(b)



(c)



(d)
- (xvi) acyclovir contains..... heterocycle (1M)
(a) Purine (b) pyrrole (c) pyrimidine (d) indole
- (xvii) Quinoline is synthesized by which of the following method. (1M)
(a) William son synthesis (b) Combes synthesis
(c) Clemmensen's reduction (d) Wurtz reaction
- (xviii) Carboxylic acids can be converted to amines by reacting with..... (1M)
(a) $KMnO_4$ (b) $FeCl_3$ (c) hydrazoic acid (d) H_2SO_4
- (xix) Fisher indole synthesis using acetone and phenylhydrazine results in (1M)
(a) 2-methylindole (b) 2-phenylindole (c) indole (d) 2-methyl,3 phenyl indole
- (xx) Cyclic equivalent of diethylamine is..... (1M)
(a) Morpholine (b) tetrahydrofuran (c) pyrrolidine (d) imidazole

PART -II

2. a) Write in detail on aromaticity in thiophene. (5M)
b) Write two methods for synthesis of pyridine. (5M)
3. a) What is steric hindrance? Discuss its role in conformational isomerism. (5M)
b) Write short note on absolute configuration. (5M)
4. How do you achieve the following synthetic conversions? (5M)
(a) Benzaldehyde to cinnamic acid (5M)
(b) Toluene to methylcyclohexane

PART -III

5. Write all possible isomers of 2-chloro-3-bromo butane using fisher projections. Identify enantiomers and diastereomers in them. (5M)
6. Discuss the stereoisomerism in biphenyl compounds. Write its significance. (5M)
7. Write methods used for resolution of racemic mixture. (5M)
8. Write a note on Bayer strain theory. (5M)

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9. Write two methods for synthesis of imidazole. (5M)
10. Compare the structure and reactivity of quinoline and pyridine. (5M)
11. Explain the mechanism, reaction conditions and industrial applications of Fisher indole synthesis. (5M)
12. Write a note on storage and uses of LiAlH_4 . (5M)
13. Discuss the mechanism and synthetic application of Beckman rearrangement. (5M)