

24/5  
Sum - 2023

Seat Number

--	--	--	--	--	--

CJ-30

BP-401-T

Pharmaceutical Organic Chemistry-III

(724401)

Total Pages : 5]

Time : 3 Hours

Max. Marks : 75

Note : (1) Do not write anything on question paper except Seat No.

(2) All questions are compulsory.

(3) Figures to the right indicate full marks.

(4) Students should note, no supplement will be provided.

10×1=10

1. (A) Choose the correct answer from the following :

(i) A molecule is said to be chiral :

(A) If it contains plain of symmetry

(B) If it contains centre of symmetry

(C) If it can not be superimposed on its mirror image

(D) If it can be superimposed on its mirror image

(ii) Optical isomers that are not mirror images are called :

(A) Diastereomers

(B) Enantiomers

(C) Metamers

(D) Meso compound

P.T.O.

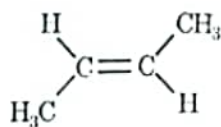
(iii) 2-butanol is optically active because it contains :

- (A) A chiral carbon
- (B) A plane of symmetry
- (C) A hydroxyl group
- (D) A centre of symmetry

(iv) Which type of compounds can not exhibit geometrical isomerism ?

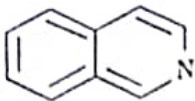
- (A) Singly bonded
- (B) A plane of symmetry
- (C) Triply bonded
- (D) A centre of symmetry

(v) Assign E or Z configuration to the given compound :



- (A) E-configuration
- (B) Z-configuration
- (C) S-configuration
- (D) R-configuration

- (vi) Nitration of pyrrole is best carried out using :
- (A) Acetyl nitrate
  - (B) Concentrated nitric acid and sulphuric acid
  - (C) Nitric acid
  - (D) Ammonium acetate
- (vii) Pyrrole, furan and thiophene undergo electrophilic substitution :
- (A) at 2-position
  - (B) at 1-position
  - (C) at 3-position
  - (D) None of the above
- (viii) Which of the following is not a five membered ring ?
- (A) Thiophene
  - (B) Furan
  - (C) Pyrrole
  - (D) Pyridine
- (ix) The breakdown product of purine is :
- (A) Nitric acid
  - (B) Uric acid
  - (C) Citric acid
  - (D) All of the above

(x)  is structure of :

- (A) iso-quinoline
- (B) quinoline
- (C) Citric acid
- (D) All of the above

(B) Answer the following :

10×1=10

- (i) Write chemical compound for one chiral compound.
- (ii) Define structural isomerism.
- (iii) What is optical isomerism ?
- (iv) What is optical activity ?
- (v) Why meso compounds are optically inactive ?
- (vi) What is difference in cis and trans isomers ?
- (vii) Draw chemical structure of cyclohexane.
- (viii) Which hybridization pyrimidine pyrrole and furan are having ?
- (ix) Which pH condition Claisen condensation requires ?
- (x) Birch reaction named after which scientist ?

2. Solve any *two* of the following :

2×10=20

- (i) Discuss racemic modification. Explain in detail. resolution of racemic mixture.

CJ-30

(ii) Discuss the synthesis and different chemical reaction of pyrrole and thiophene.

(iii) Explain confirmation isomerism in ethane and cyclohexane.

7×5=35

3. Attempt any seven of the following :

(i) Describe enantiomers and diastereomers in detail.

(ii) Explain optical activity with suitable example.

(iii) Discuss geometrical isomerism.

(iv) Explain medicinal use of :

(a) Furan

(b) Thiophene

(c) Imidazole

(v) Write a note on basicity of pyridine.

(vi) Write reaction involved in Birch reduction.

(vii) Discuss *one* example of Beckman rearrangement.

(viii) Explain synthetic application of appenauer oxidation.

(ix) Predict the product :

