

Roll No.

Total No. of Pages : 02

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B.Pharma (2011 to 2016) (Sem.-3)
PHARMACEUTICAL CHEMISTRY-IV
(Organic Chemistry-II)
Subject Code : BPHM-306
M.Code : 46226

Time : 3 Hrs.

Max. Marks : 80

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of FIFTEEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains FOUR questions carrying TEN marks each and students have to attempt any THREE questions.

SECTION - A**1. A. What happens when :**

- a) Furan reacts with ammonia in presence of alumina at 400°C.
- b) Oxazole is heated with ammonia and primary amines.
- c) Pyridine is oxidised by H₂O₂ in acetic acid.
- d) Isoquinoline is treated with tin/HCl.
- e) α- Halocarbonyl compounds undergo cyclocondensation with thioamide.

B. Attempt following :

- f) What is the first step of Killiani synthesis of glucose?
- g) Why is sucrose nonreducing disaccharide? Justify with structure.
- h) Draw structure of lactone of cis-o-hydroxycinnamic acid.
- i) Why C4 and C5 positions of imidazole are equivalent for substitution?
- j) Draw the structure of any one nucleotide present in DNA.
- k) Draw the structure of Sanger's reagents used in the terminal residue analysis of protein.
- l) Give reaction for conversion of Xanthine to Caffeine.

- m) What is iodine number?
- n) Give reaction for Michael addition of Diethylmalonate to α , β -unsaturated carbonyl compounds.
- o) Give reaction for Diel-Alder addition of 1,3-butadienes on maleic anhydride.

SECTION-B

- 2. Describe five common properties of α -amino acids.
- 3. Give the structures of five common nitrogenous bases present in nucleic acids. Comments on tautomerism present in these bases.
- 4. Name various chemical constants used in the analysis of oils and fats. Explain the determination of saponification number.
- 5. Describe various steps involved in Traube's synthesis of caffeine.
- 6. Explain benzyne mechanism of nucleophilic aromatic substitution in arylhalide.

SECTION-C

- 7. Explain why :
 - a) Pyridine undergoes electrophilic substitutions at 3-positions. 3
 - b) In quinoline electrophilic substitutions occurs preferentially in benzene ring whereas nucleophilic substitution occurs preferentially in pyridine ring. 4
 - c) Give any one synthesis of imidazole. 3
- 8. Compare electrophilic substitution reactions in pyrrole, furan and thiophine. 10
- 9. a) Give outline for Ruff's degradation for conversion of aldohexoses to aldopentoses. 5
 - b) Discuss any one method for determining pyranosyl ring present in glucose. 5
- 10. a) Give synthetic evidences in support of structure of sucrose. 4
 - b) Give reason for inversion in rotation of sucrose upon hydrolysis. 3
 - c) Compare structures of starch and cellulose. 3

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.