

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)  
BSc DEGREE EXAMINATION MAY 2019  
(Sixth Semester)

Branch - CHEMISTRY

**ORGANIC CHEMISTRY-II**

Time : Three Hours

Maximum : 75 Marks

**SECTION-A (20 Marks)**

Answer ALL questions

ALL questions carry EQUAL marks (10 x 2 = 20)

- 1 Why pyrrole, furan and thiophene are classified as aromatics?
- 2 How will you prepare pyridine from pyrrole?
- 3 What is meant by denaturation of proteins?
- 4 What is a nucleotide? Write the structure of nucleotide containing uracil.
- 5 Illustrate Oppenauer oxidation.
- 6 How will you convert acetophenone into ethylbenzene? Name the reaction;
- 7 What is Saytzeff's rule?
- 8 Why does  $S_N2$  reaction take place with stereochemical inversion?
- 9 How will you prepare cyclopentane from diethyl adipate?
- 10 Why is chair form of cyclohexane more stable than boat form?

**SECTION - B (25 Marks)**

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 5 = 25)

- 11 a Describe the nucleophilic substitution reactions of pyridine.  
OR  
b Quinoline undergoes electrophilic attack in the benzene ring while the nucleophilic attack takes place in the pyridine ring. Explain.
- 12 a Describe the preparation and properties of alanine.  
OR  
b Give the main importance of RNA and DNA.
- 13 a Describe Curtius rearrangement.  
OR  
b Name thermal rearrangements. Explain any one of it with mechanism.
- 14 a What are the factors that affect  $S_N1$  and  $S_N2$  reactions?  
OR  
b Explain the mechanism of dehydrohalogenation.
- 15 a Discuss the conformational analysis of n-butane.  
OR  
b Explain the conformations of disubstituted cyclohexane.

**SECTION - C (30 Marks)**

Answer any THREE Questions

ALL Questions Carry EQUAL Marks (3 x 10 = 30)

- 16 a Describe the synthetic utility of lead tetraacetate. (5)  
b Write what you know about periodic acid as an oxidant. (5)
- 17 Write a detailed account of primary and secondary structure of proteins.
- 18 Complete the following reactions and suggest a possible mechanism :  
Benzamide + bromine + KOH ?  
3 - Phenylpropane - 2, 3 - diol +  $H_2SO_4 \rightarrow ?$
- 19 a Describe the benzyne mechanism for nucleophilic aromatic substitution. Give evidence in support of the mechanism. (6)  
b State and explain Hoffmann rule. (4)