

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)  
BSc DEGREE EXAMINATION JUNE 2014  
(Fifth Semester)

Branch – CHEMISTRY

ORGANIC CHEMISTRY - I

Time : Three Hours

Maximum : 75 Marks

SECTION-A (20 Marks)

Answer ALL questions

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

- 1 What is mean by epimerization?
- 2 What happens when Glucose is treated with  
(i)  $\text{ConC.HNO}_3$  (ii) Excess of phenylhydrazine?
- 3 State isoprene rule.
- 4 What are vitamins? Give two examples.
- 5 Write any two synthetic uses of malonic ester.
- 6 What is mean by tautomerism?
- 7 How is free radical formed?
- 8 Write the benzoin condensation reaction.
- 9 Define chromophone. Give two examples.
- 10 What are xanthene dyes?

SECTION - B (25 Marks)

Answer ALL Questions

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

- 11 a Discuss the preparation, physical and chemical properties of fructose.  
OR  
b Explain the mutarotation and its mechanism.
- 12 a Describe how the structure of Geraniol was established.  
OR  
b Discuss the structure of piperine.
- 13 a Write a short note on keto-enol tautomerism.  
OR  
b Explain the synthesis and uses of cyanoacetic ester.
- 14 a How is free radicals detected? Explain the thermal fission of Benzoyl peroxide.  
OR  
b Explain the mechanism of Cannizzaro reaction.
- 15 a What are acidic and basic dyes? Explain with suitable examples.  
OR  
b Discuss the theory of colour and constitution.

SECTION - C (30 Marks)

Answer any THREE Questions

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

- 16 a What are carbohydrates? How are they classified? Give an example for each type. (6)  
b How is Glucose converted into fructose and vice versa? (4)
- 17 Establish the structure of Ascorbic acid. (5)
- 18 a Write a short note on Nitro-Acinitro tautomerism. (5)  
b Describe the synthetic uses of Malonic ester and Acetoacetic ester. (5)
- 19 Explain the mechanism of Aldol condensation and claisen condensation. (5+5)
- 20 What are dyes? How are they classified based on their chemical constitution? (3+7)