

**PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)**

**BSc DEGREE EXAMINATION DECEMBER 2018  
(Fifth Semester)**

Branch - **CHEMISTRY**

**ORGANIC CHEMISTRY -1**

Time : Three Hours

Maximum : 75 Marks

**SECTION-A (20 Marks)**

Answer **ALL** questions

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

- 1 What are oligosaccharides? Give two examples.
- 2 Define mutarotation.
- 3 Give the nature of heterocyclic rings present in coniine and nicotine.
- 4 How are phenolic - OH and -COOH groups in alkaloids detected?
- 5 Acetoacetic ester decolorizes bromine water and it gives red violet color with neutral  $\text{FeCl}_3$ . Why?
- 6 How is acetoacetic ester prepared?
- 7 Tertiary alkyl radical is more stable than secondary alkyl radical. Explain.
- 8 Illustrate aldol condensation with an example.
- 9 Write two examples for phthalein dyes.
- 10 Write the structures of methyl orange and indigo.

**SECTION - B (25 Marks)**

Answer **ALL** Questions

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

- 11 a How can glucose be converted into fructose?  
OR  
b Discuss the hydrolysis of sucrose. Why is it called "Invert Sugar"?
- 12 a Write briefly on Hoffmann exhaustive methylation.  
OR  
b Describe the synthesis of ascorbic acid.
- 13 a Discuss nitro-acinitro tautomerism with examples.  
OR  
b Explain any five uses of acetoacetic ester.
- 14 a Describe benzoin condensation and give an evidence for it.  
OR  
b Outline the mechanism of Wittig reaction.
- 15 a How are dyes classified according to chemical constitution?  
OR  
b Outline the preparation of malachite green.

**SECTION - C (30 Marks)**

Answer any **THREE** Questions

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

- 16a Explain Kiliani synthesis for the conversion of arabinose into glucose. (5)
- b Mention any five uses of cellulose. (5)
- 17 Write the synthesis of (a) Nicotine (b) Menthol. (6 + 4)
- 18 Starting from malonic ester, explain the synthesis of carboxylic acids, ketones and barbiturates. (4+3+3)
- 19 Describe the mechanisms of Claisen, Cannizzaro and crossed Cannizzaro reaction. (6+4)
- 20 a What are chromophores and auxochromes. Give examples. (5)