

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

**BSc DEGREE EXAMINATION DECEMBER 2017**  
(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 Explain why glucose is a reducing sugar?
- 2 What is epimerization?
- 3 Give the hydrolysis reaction of piperine in presence of alkali.
- 4 What is isoprene rule? How are terpenoids classified?
- 5 What is active methylene group? Give two examples.
- 6 Write the synthesis of barbituric acid from malonic ester.
- 7  $2C_6H_5CHO \xrightarrow{KCN} ?$ . Predict the product and name the reaction.
- 8 Write Knoevenagel reaction.
- 9 What are chromophores and auxochromes? Give one example for each.
- 10 What are the characteristics of a good dye?

**SECTION - B (25 Marks!)**

Answer **ALL** Questions

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

- 11 a Write the following conversions:
  - (i) Glucose into fructose
  - (ii) Fructose into mannose

OR

  - b (i) What is mutarotation? Explain its mechanism. (4)
  - (ii) Why sucrose is non reducing sugar? (1)
- 12 a Write the isolation and chemical properties of Geraniol.
 

OR

  - b Discuss the structure of Vitamin C.
- 13 a Explain Keto-enol tautomerism.
 

OR

  - b Write the synthesis of (i) Sucinic acid and (ii) 3-unsaturated acid using acetoacetic ester.
- 14 a What are free radicals? Explain their detection. Give an account on their stability.
 

OR

  - b Suggest a suitable mechanism for the conversion of benzaldehyde to cinnamic acid.
- 15 a Give an account on colour and constitution.
 

OR

  - b Write any one preparation method for the following dyes:
    - (i) Alizarin
    - (ii) Malachite green

**Cont...**

**SECTION - C (30 Marks)**

Answer any **THREE** Questions

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

- 16(i) Give an account on ring structure of glucose. (5)
- (ii) Write a short note on structure of cellulose. Mention any two applications of Cellulose. (5)
- 17 Establish the structure of nicotine. Give its synthesis.
- 18 Write any five synthetic applications of malonic ester.
- 19 a) Give the mechanism of the following reactions  
(i) aldol condensation  
(ii) claisen condensation
- b) Explain why formaldehyde gives Cannizzaro's reaction whereas acetaldehyde gives aldol condensation under similar conditions?
- 20 Explain the classification of dyes based on the chemical constitution.

**Z-Z-Z**

END