PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION MAY 2017 | H *L*>*S*
(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 (1 0 x 2 = 20)

1 Give the oxidation reactions of glucose and fructose.
2 Draw the cyclic structures of D-fructose.
3 Show the isoprene units present in menthol and a-pinene.
4 How is the nature of N atom detected in alkaloids?
5 How is barbitone prepared? Mention its use.
6, Define nitro-acinitro tautomerism.
7 Give the product of the reaction of formaldehyde with acetaldehyde in dil.NaOH.
8 How will you effect the conversion of benzaldehyde to styrene?
9 What are the characteristics of a dye?
10 What are azo dyes? How are they known?

SECTION - B (25 Marks)

Answer ALL Questions

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

11 a Discuss the constitution of sucrose.

OR

b Describe the steps to effect the conversion of glucose into fructose and mannose.

12 a Describe the isolation of terpenoids from plant sources.

OR

b Discuss the structure of vitamin C.

13 a Compare the acid and base catalysed mechanism of keto-enol tautomerism.

OR

b Starting from malonic ester, hoe are glycine and adipic acid prepared.

14 a Complete the following and suggest a mechanism :

Benzaldehyde + ? ----------► cinnamic acid.

OR

b Discuss the stability and any two reactions of free radicals.

15 a Explain the terms : (i) Chromophores and (ii) Auxochromes.

OR

b Give any two methods of preparation, properties and uses of indigo.

SECTION - C (30 Marks)

Answer any THREE Questions

ALL Questions Carry EQUAL Marks (3 x 1 0 = 30)

16 a Describe how the configuration of D-glucose is established. (6)
b Draw the structures and point out the differences between starch and cellulose. * (4)

17 Discuss the constitution of piperine.

18 How are the following prepared from acetoacetic ester? (i) Butanone (ii) Acetylacetone (iii) Isobutryic acid and (iv) Crotonic acid.

19 What happens when benzaldehyde is heated with con. NaOH and aq. Ale. KCN? . Explain their mechanism.

20 a Describe the molecular orbital theory of colour and constitution. (6)