

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION MAY 2019
(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 Glucose is a reducing sugar. Reason out.
- 2 What do you understand by the term epimer?
- 3 Give the classification of terpenes.
- 4 What are alkaloids?
- 5 How is acetoacetic ester prepared?
- 6 Define tautomerism.
- 7 What is Benzoin condensation reaction? Give an example.
- 8 The decreasing order of reactivity in nucleophilic addition reaction of carbonyl compound is formaldehyde > acetaldehyde > acetone. Account for this order.
- 9 Give two examples for each of the following dyes:
(i) Acidic dyes and (ii) Basic dyes.
- 10 What are mordants? Give an example.

SECTION - B (25 Marks)

Answer ALL Questions

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

- 11 a What are polysaccharides? Give the structures of starch and cellulose.
OR
b How will you convert an aldose into a ketose?
- 12 a Outline the synthesis of piperine.
OR
b How does geraniol react with (i) Br₂ (ii) dil.H₂SO₄ and (iii) CrO₃? (1+2+2)
- 13 a How will you convert malonic ester into
(i) n-valeric acid (ii) Barbituric acid?
OR
b Discuss nitro - acinitro tautomerism with suitable examples.
- 14 a What are free radicals? How are they formed? Discuss their stability.
OR
b What is Gomberg reaction? Discuss its mechanism.
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- 15 a How is Indigo dye prepared commercially?
OR
b How are fluorescein and phenolphthalein prepared?

SECTION - C (30 Marks)

Answer any **THREE** Questions

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

- 16 Elucidate the structure of sucrose.
- 17 Explain giving equations how you would proceed to effect the following conversion:
i) Acetoacetic ester into acetyl acetone
ii) Malonic acid into crotonic acid
iii) Ethyl acetoacetate into hexane - 2, 5 - dione?
- 18 Elucidate the structure of vitamin - C.
- 19 What happens when benzaldehyde is heated with
i) Acetic anhydride at 140°C in the presence of sodium acetate
ii) Malonic ester in the presence of pyridine?
Discuss their mechanisms.
- 20 What are Dyes? How are they classified on the basis of their applications and chemical structures? Give two examples for each class.

Z-Z-Z

END