

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2022
(Fifth Semester)

Branch – CHEMISTRY

ORGANIC CHEMISTRY - I

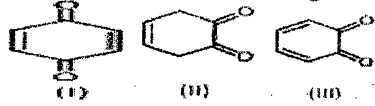
Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (10 x 1 = 10)

- 1 When glucose is warmed with excess of phenyl hydrazine it gives a yellow precipitate of
(i) oxime (ii) cyanohydrin
(iii) osazone (iv) hydroxylamine
- 2 Glucose and fructose are
(i) optical isomers (ii) tautomers
(iii) functional isomers (iv) carbon chain isomers
- 3 Which is not an alkaloid?
(i) Squalene (ii) Nicotine
(iii) Coniine (iv) Piperine
- 4 Zeisel method is used for the determination of ____ group.
(i) $-\text{CH}_2$ (ii) $-\text{COCH}_3$
(iii) $-\text{OCH}_3$ (iv) $-\text{CH}_3$
- 5 In keto-enol form presence of which type of hydrogen is must?
(i) Alpha (ii) Beta
(iii) Gamma (iv) Any position of hydrogen
- 6 Which of the following structure can show tautomerism?

(i) I (ii) II
(iii) III (iv) I and III
- 7 Aldol contains
(i) alcohol and acid groups (ii) aldehyde and keto groups
(iii) aldehyde and alcohol groups (iv) aldehyde and acid groups
- 8 Which of the following will undergo Cannizzaro reaction?
(i) CH_3CHO (ii) CH_3COCH_3
(iii) $(\text{CH}_3)_3\text{CCHO}$ (iv) $\text{CH}_3\text{CH}_2\text{CHO}$
- 9 Indigo shows cis-trans isomerism. Which is the stable form of Indigo?
(i) Cis (ii) Trans
(iii) Either cis or trans (iv) Both of the above
- 10 Flavones are used in ____
(i) Modern dyes (ii) Developed dyes
(iii) Substantive dyes (iv) Neutral dyes

Cont...

SECTION - B (25 Marks)Answer **ALL** questions**ALL** questions carry **EQUAL** Marks (5 x 5 = 25)

- 11 a Classify and explain the carbohydrates.
OR
b Bring out the applications of cellulose.
- 12 a Explain the preparation of nicotine.
OR
b Explain the properties and uses of geraniol.
- 13 a Explain the concepts of acids and bases.
OR
b Describe the synthesis of acetoacetic ester.
- 14 a Summarize the Gomberg - Bachman reaction with examples.
OR
b Explain the thermal fission of benzoyl peroxide.
- 15 a Describe the colour and constitution of dyes.
OR
b Explain the structure and extraction of flavones.

SECTION -C (40 Marks)Answer **ALL** questions**ALL** questions carry **EQUAL** Marks (5 x 8 = 40)

- 16 a Inter convert the following, i) aldose to ketose ii) ketose to aldose (4+4)
OR
b Elucidate the structural elucidation of sucrose.
- 17 a Discuss the structural elucidation of pyridoxine.
OR
b Highlight the structural elucidation of menthol.
- 18 a Enumerate in detailed the reactions and applications of malonic ester.
OR
b Discuss the mechanism of nitro-acinitro and nitroso-oximino tautomerisms.
- 19 a Elucidate the formation, detection and stability of free radicals.
OR
b Compare the mechanisms of the following,
i) Benzoin reaction ii) Cannizzaro reaction (4+4)
- 20 a Classify the dyes based on application and chemical constitutions.
OR
b Discuss about the Vat dyes and Azo dyes.

Z-Z-Z

END