

(FOR THE CANDIDATES ADMITTED

SUB CODE 25PCY205

DURING THE ACADEMIC YEAR 2025-2026 ONLY)

REG.NO. :

N.G.M.COLLEGE (AUTONOMOUS) : POLLACHI

END-OF-SEMESTER EXAMINATIONS : APRIL 2026

M.Sc CHEMISTRY

MAXIMUM MARKS: 75

SEMESTER :II

TIME : 3 HOURS

ORGANIC CHEMISTRY-II-ORGANIC REACTION AND STEREOCHEMISTRY**SECTION – A****(10 X 1 = 10 MARKS)****ANSWER THE FOLLOWING QUESTIONS.****(K1)**

- Which is the mildest reducing agent which reduces only carbonyl group in presence of nitro, carboxyl, double bond and ester groups?
a) LiAlH_4 b) Na-NH_3 c) NaBH_4 d) $\text{H}_2\text{-Ni}$
- Which transition in the Jablonski diagram is a "radiative" process?
a) Internal Conversion b) Intersystem Crossing
c) Fluorescence d). Vibrational Relaxation
- Which property remains conserved throughout a pericyclic reaction according to Woodward and Hoffmann?
a) Bond enthalpy b) Molecular orbital symmetry
c) Hybridization state d) Magnetic susceptibility
- Which of the following compounds exhibits axial chirality?
a) Lactic acid b). Substituted Allene c). Tartaric acid d). 2-Butanol
- Which reagent is commonly used as a general spray reagent for the detection of alkaloids on a TLC plate?
a) Tollen's Reagent b) Dragendorff's Reagent
c) Fehling's Solution d) Benedict's Reagent

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES

- Identify the components of the Jones reagent. **(K2)**
- A process where a donor molecule transfers its excitation energy to an acceptor molecule is called-----
- The [3,3]-sigma tropic rearrangement of an allyl vinyl ether is specifically known as the ----
- The E/Z notation is based on which set of rules?
- Herzig-Meyer's method is used to estimate which functional group?

SECTION – B**(5 X 5 = 25 MARKS)****ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K3)**

- Propose the Synthesis, Properties and uses of Selenium dioxide.

(OR)

 - Make a note on the Synthesis, Properties and uses of Wilkinson catalyst.

12. a) Sketch the Jablonski diagram with suitable explanation.
(OR)
b) Explain Paterno-Buchi reaction.
13. a) Illustrate with explain the electrocyclic reactions of 1,3-diene system.
(OR)
b) Relate Claisen rearrangement reaction.
14. a) Compile a note on optical activity of Biphenyls.
(OR)
b) Describe about conformation of butane.
15. a) Discuss the general methods for the determination of alkaloids.
(OR)
b) Examine the structural elucidation of morphine.

SECTION – C

(5 X 8 = 40 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.

16. a) Compose the synthesis of Merrifield resin.
(OR)
b) Give an account on LiAlH_4 .
17. a) Build the laws of photochemistry.
(OR)
b) Describe about Norrish type-I and type -II reactions.
18. a) Discuss the Woodward Hoffmann selection rule for cycloaddition reactions.
(OR)
b) Explain with suitable reaction and mechanism of Di-Pi methane rearrangement.
19. a) Compare between enantiotropic and **diastereotopic ligands and faces**
(OR)
b) Discuss about conformational analysis of decalins.
20. a) Describe the structure of reserpine acid.
(OR)
b) Construct the structural elucidation and synthesis of nicotine.
