

(FOR THE CANDIDATES ADMITTED

SUBJECT CODE **21 PCY 310**

DURING THE ACADEMIC YEAR 2021-22 ONLY)

REG.NO. : **N.G.M.COLLEGE (AUTONOMOUS) : POLLACHI****END-OF-SEMESTER EXAMINATIONS : DECEMBER – 2022****M.Sc. – CHEMISTRY****MAXIMUM MARKS: 70****III SEMESTER****TIME : 3 HOURS****ORGANIC CHEMISTRY –III****NATURAL PRODUCTS AND ORGANIC REAGENTS****SECTION – A (10 X 1 = 10 MARKS)****ANSWER THE FOLLOWING QUESTIONS.****MULTIPLE CHOICE QUESTIONS.****(K1)**

- Zingiberene on catalytic hydrogenation yields
 - Dihydrozingiberene
 - hexahydrozingiberene
 - trihydrozingiberene
 - tetrahydrozingiberene
- When chloroform solution of cholesterol reacts with sulphuric acid it produces a red color. The reaction is called as
 - Liebermann-Burchard reaction
 - Salkowski reaction
 - dye test
 - Liebermann reaction
- The process of “deconstructing” a target molecule into readily available starting materials.....
 - Green synthesis
 - Retrosynthesis
 - Click Chemistry
 - Molecular modelling.
- Reactions involving the change in the carbon skeleton through the rearrangement of the carbocation intermediate are collectively known as
 - Pinacol-pinacolone rearrangement
 - Wagner-Meerwein rearrangement
 - Wolff rearrangement
 - Fries rearrangement
- Which reagent used to get the ether from alcohol?
 - DCC
 - DBU
 - DIBAL-H
 - DDQ

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES. (K2)

- Name a terpene which forms an adduct with maleic anhydride
- What happens when ergosterol is subjected to Oppenauer oxidation?
- What is meant by a synthon?
- In which rearrangement an ester is formed when α -haloketones (chloro or bromo) react with an alkoxide ion
- What reagent is used for selective bromination of allylic position of cyclohexene?

SECTION – B**(5 X 4 = 20 MARKS)****ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.****(K3)**

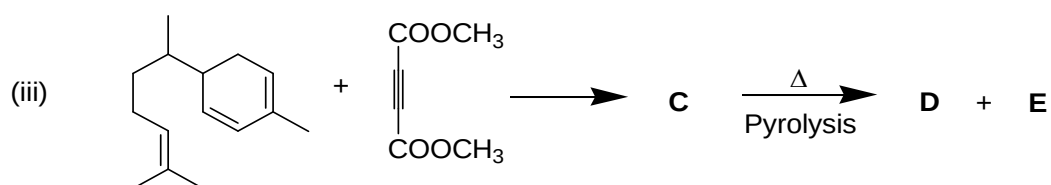
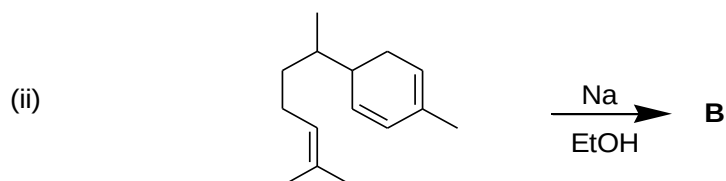
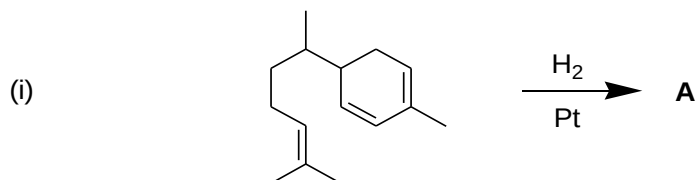
11. a) Describe what happens when Zingiberene is subjected to ozonolysis
(OR)
b) List down the evidences with suitable examples to support isoprene rule
12. a) Develop a method to establish the nature of the side chain in ergosterol.
(OR)
b) Describe a reaction in which a Diels hydrocarbon is formed from cholesterol.
13. a) Sketch with appropriate examples the symbols used in Retrosynthetic Analysis for
(i) Disconnection
(ii) Retrosynthetic arrow
(iii) Synthetic arrow
(OR)
b) Show the retrosynthetic pathway of Robinson annulation reaction
14. a) Show that Fries rearrangement involve migration of a group from oxygen to carbon of an aromatic ring.
(OR)
b) Discuss the mechanism of Wolf rearrangement
15. a) Decarboxylation and desulphonation reactions can be carried out with Wilkinson's catalyst. Support your answers with suitable examples.
(OR)
b) Discuss the synthesis and applications of lithium diisopropyl amide (LDA)

(CONTD 3)

SECTION – C

(4 X 10 = 40 MARKS)

ANSWER ANY FOUR OUT OF SIX QUESTIONS

(16th QUESTION IS COMPULSORY AND ANSWER ANY THREE QUESTIONS
(FROM Qn. No : 17 to 21) (K4 (Or) K5)16. Identify the products **A**, **B**, **C**, **D** and **E** in the following transformations.

17. Determine the position of the carboxylic acid group and position of angular methyl group in Abietic acid.
18. Summarize the facts used to elucidate the structure of cholesterol
19. Analyse what is meant by functional group interconversion in retrosynthetic analysis.
20. Discuss the mechanism of the following rearrangements and highlight the common features.
1. Wagner-Meerwin rearrangement
 2. Dienone-phenol rearrangement
21. Justify your answer with suitable examples that N-bromo succinic acid is a selective brominating agent.
