

CLASS: M.Sc. CHEMISTRY

15A/ 256

St. JOSEPH'S COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI – 620 002

SEMESTER EXAMINATIONS – APRIL 2015

TIME: 2 Hrs. 20 Mins.

MAXIMUM MARKS: 70

SEM	SET	PAPER CODE	TITLE OF THE PAPER
II	2014	14PCH2107	ORGANIC CHEMISTRY – II

SECTION – B

Answer all the questions:

5 x 5 = 25

31. a. Write the mechanism of the Gatterman-Koch reaction.

OR

b. Discuss in short the meta-directing ability of nitro group.

32. a. Write the mechanism of chlorobenzene reacting with NaNH_2 .

OR

b. Write the mechanism of Birch's reduction.

33. a. Propose the mechanism of Aldol condensation.

OR

b. Write the cope reaction with an example and propose the mechanism.

34. a. What is oxidation, in organic chemistry reactions?

OR

- b. Predict the possible products in the following reaction of a ketone (RCOR) involving different reducing agents:
- (i) Zn-Cu, TiCl₃ (ii) Zn-Hg, HCl (iii) LiAlH₄
(iv) Na-Hg
35. a. Consider the reaction: (+) PhCHMeCOOH → (-) PhCHMeNH₂.
How is it converted by Lossens Rearrangement

OR

- b. Consider the reaction: (+) PhCHMeCOOH → (-) PhCHMeNH₂.
How is it converted by Schmidt Rearrangement

SECTION – C

Answer any THREE questions:

3 x 15 = 45

36. a. Write the general arenium-ion mechanisms. Give the evidences. (4+5)
- b. Discuss the general theory of reactivity of substrates in aromatic electrophilic substitution reaction. (6)
37. a. Write the mechanism of the Sommelet-Hauser reaction. (8+7)
- b. Workout the mechanistic pathway for the Darzen's reaction.
38. a. Write the general mechanism of E2 elimination. List the evidences. (3+4)
- b. Propose the mechanism of the Chugave reaction. Predict the products. (6+2)

39. a. How does LiAlH_4 reduce each one of the following: (7)
i. RCOOH ii. RCONH_2 iii. RSO_2Cl iv. $\text{R}_2\text{C}=\text{NOH}$
- b. What are the five major types of oxidation reactions? Explain each type with one example. (8)
40. Write the mechanism of each of the following rearrangement reactions: (8+7)
- i. Neber rearrangement ii. Favorski rearrangement
