

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION SP2023)

CLASS: IMSc.
BRANCH: CHEMISTRY

SEMESTER : IV
SESSION : SP2023

SUBJECT: CH218 ORGANIC CHEMISTRY-III

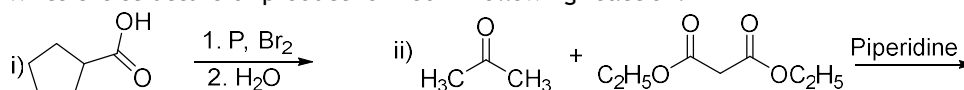
TIME: 02 Hours

FULL MARKS: 25

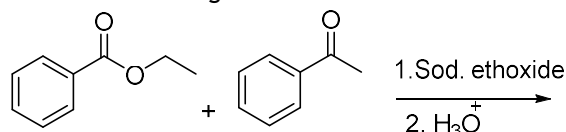
INSTRUCTIONS:

1. The question paper contains 5 questions each of 5 marks and total 25 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
4. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates

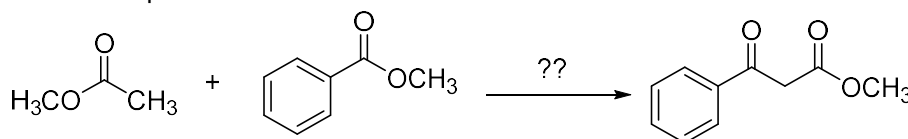
Q.1(a) Write the structure of product formed in following reaction. [2] CO 1 BL 4



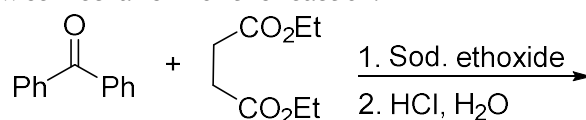
Q.1(b) Write the mechanism of the following reaction. [3] 2 4



Q.2 a) Which solvent you will prefer to use in the following condensation reaction. [2+3] 1 3
b) Write the stepwise mechanism for this reaction.

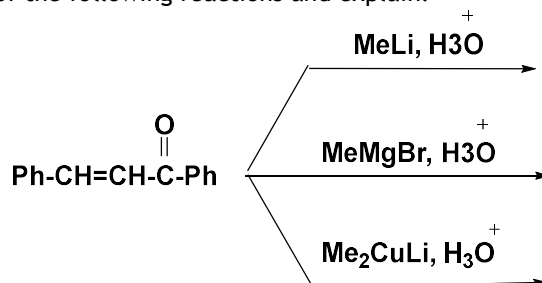


Q.3 a) Write the structure of the product formed. [2+3] 1 3
b) Write the stepwise mechanism for this reaction.

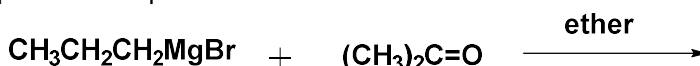


Q.4(a) When aniline is subjected to the Friedel-Crafts alkylation in presence of catalytic amount of AlCl₃, alkylation does not occur; while in presence of a large excess of AlCl₃, a very small amount of meta-alkylation is obtained. Explain [2] 1 3

Q.4(b) Give the products of the following reactions and explain: [3] 2 4



Q.5(a) Predict the product with plausible mechanism: [2] 1 3



Q.5(b) Use Reformatsky reaction to synthesize PhC(Me)=C(Me)CO₂H. Why Magnesium cannot replace zinc in the synthesis? [3] 2 4