BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

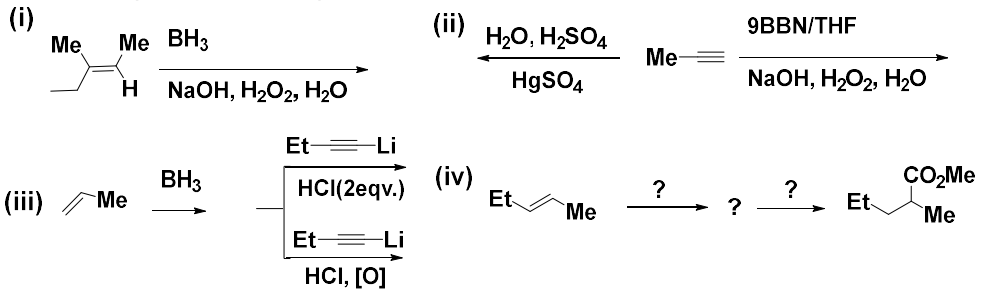
CLASS: IMSc/MSc | **SEMESTER : IMSc IX/MSc III**
BRANCH: CHEMISTRY | **SESSION : MO/2024**

SUBJECT: CH504 ADVANCE ORGANIC SYNTHESIS

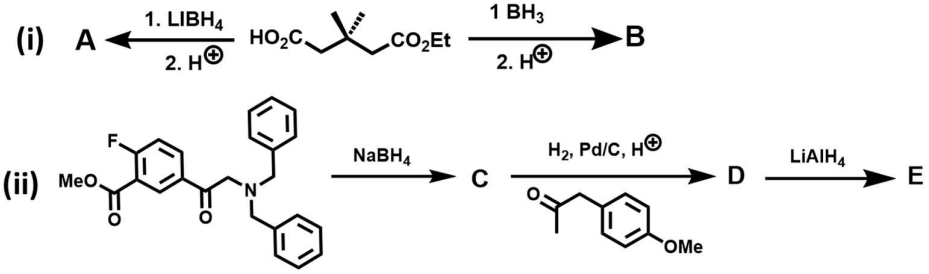
TIME: 3 Hours | **FULL MARKS: 50**

INSTRUCTIONS:
1. **The question paper contains 5 questions each of 10 marks and total 50 marks.**
2. **Attempt all questions.**
3. **The missing data, if any, may be assumed suitably.**
4. ***Before attempting the question paper, be sure that you have got the correct question paper.***
5. **Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.**

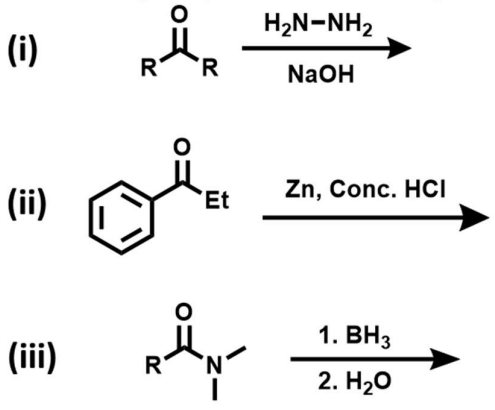
			CO	BL
Q.1	Predict the product(S) with plausible mechanism.	[2.5x4]	2	3



Q.2(a)	Identify the structure of the product (A, B, C, D, and E) in given reaction	[5]	1	3



Q.2(b)	Discuss the mechanism and identify the product for following the transformation	[5]	2	3



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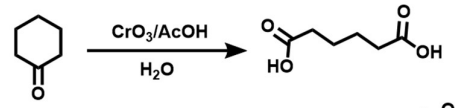
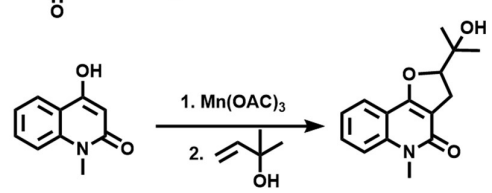
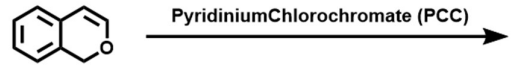
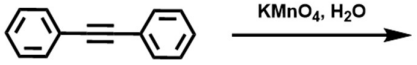
Q.3(a) Discuss the mechanism for following the transformation reaction [5] 3 3

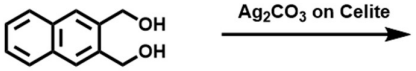
(i) 

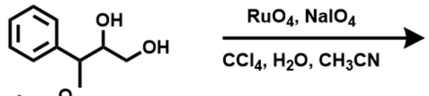
(ii) 

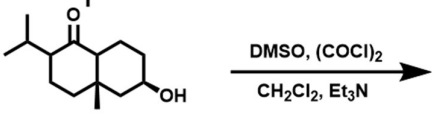
Q.3(b) Identify the structure of major product in the following reaction [5] 3 3

(i) 

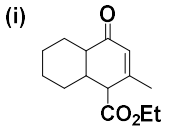
(ii) 

(iii) 

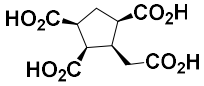
(iv) 

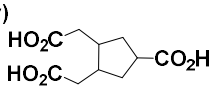
(v) 

Q.4 Give retrosynthetic analysis and an efficient synthesis of each of the following. [2.5x4] 2 3

(i) 

(ii) 

(iii) 

(iv) 

Q.5(a) Draw complete supramolecular COFs structure using C3 symmetrical aldehyde and ketone under acidic condition. Predict geometry. [5] 3 3

Q.5(b) Give one example of each of the following reactions based on microwave assisted reaction [5] 3 3

(i) Beckmann rearrangement, (ii) Benzil-benzilic acid rearrangement, (iii) Pinacol-pinacolone rearrangement, (iv) Hydrolysis of easter

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