

**Ph.D. IN CHEMISTRY  
(PHDCHEM)**

00311

**Term-End Examination**

**December, 2017**

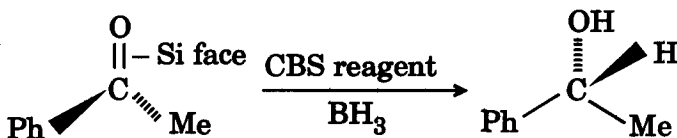
**RCHE-001 : ADVANCES IN ORGANIC CHEMISTRY**

*Time : 3 hours*

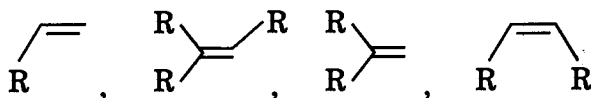
*Maximum Marks : 100*

**Note :** Answer *all* the questions.

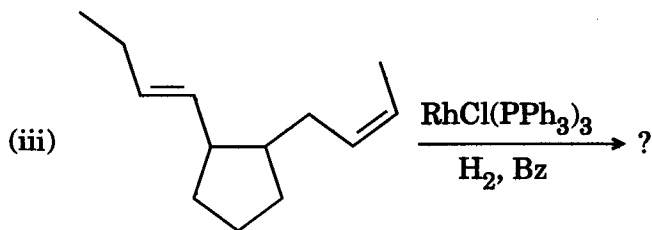
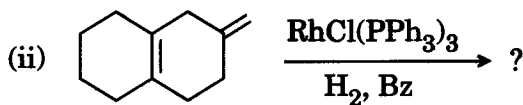
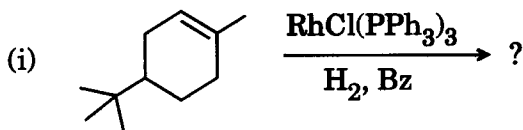
1. "Chiral auxiliary synthesis is more versatile than chiral pool synthesis." Justify the statement with the help of an example of each. 10
  
2. Write the mechanism of the following reaction and explain the selectivity of the product formation : 10



3. (a) Arrange the following alkyl group substituted alkenes in the decreasing order of their reactivity. Justify your answer. 4



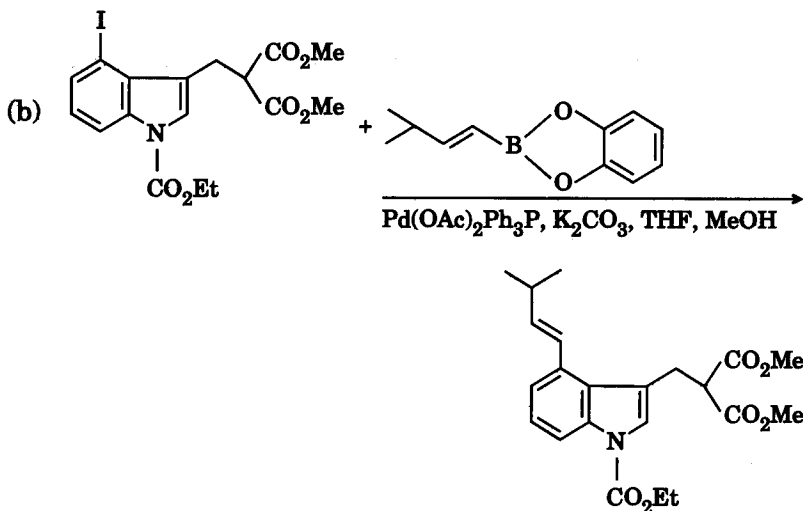
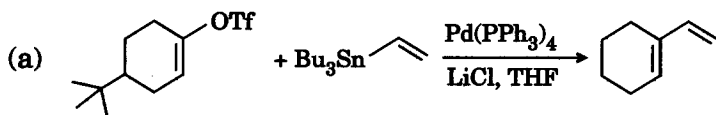
- (b) Write the preferred hydrogenation product in the following : 6



4. What is meant by a Solvent-Free reaction ? Explain, giving examples. 10
5. Expand the acronym MAOS. Explain, giving suitable examples, with their reaction conditions. 10

6. Write the name and give the mechanism of any **one** of the following reactions :

10



7. Compare the scope of molecular and supramolecular chemistry according to Lehn, with suitable diagrams.

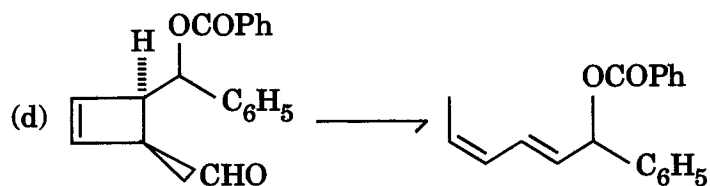
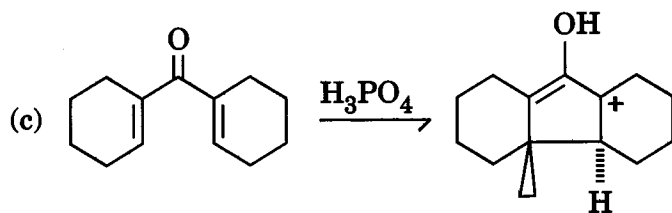
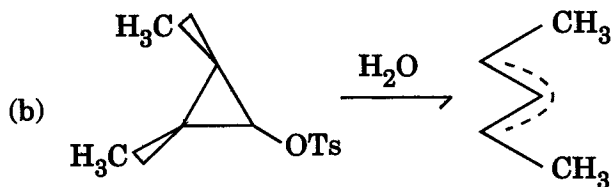
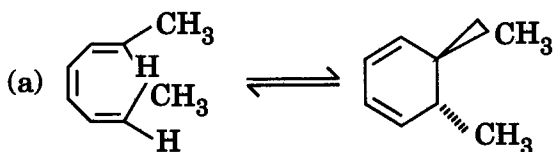
10

8. What is the nature of supramolecular interactions ?

10

9. Using FMO model, write the correct reaction conditions and the type of rotation for the following conversions :

10



10. Complete the following reactions :

10

