Theory



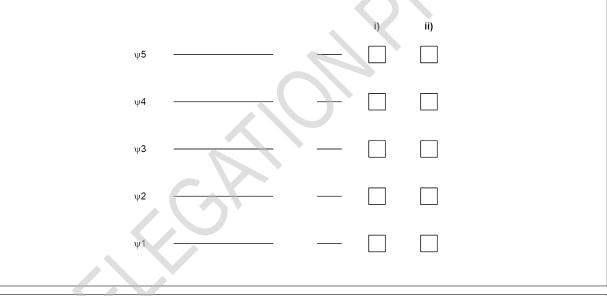


## **Nazarov Reaction - Answer Sheet**

5% of total							
Question	8.1	8.2	8.3	8.4	8.5	8.6	Total
Points	5	2	6	2	8	8	31
Score							

#### **8.1** (5 pt)

**Draw** the pi molecular orbitals to describe the Nazarov reaction. **Fill in** the electrons into the respective energy levels. **Mark** with an X the **i**) HOMO (highest occupied molecular orbital) and **ii**) LUMO (lowest unoccupied molecular orbital).



#### **8.2** (2 pt)

From the pi molecular orbitals you derived in **Task 8.1**, **predict** under which conditions the Nazarov reaction of the divinyl ketone will proceed in a disrotatory or conrotatory fashion. In the **table**, **mark** with an X the conditions under which the reaction is allowed.

	disrotatory	conrotatory
thermal		
photochemical		

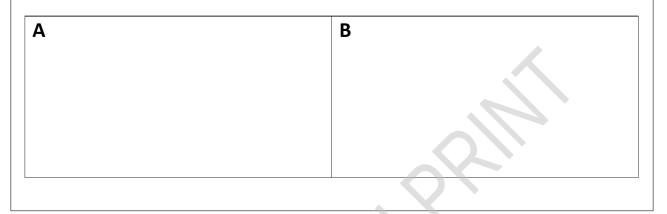
## Theory



A8-2 English (Official)

### **8.3** (6 pt)

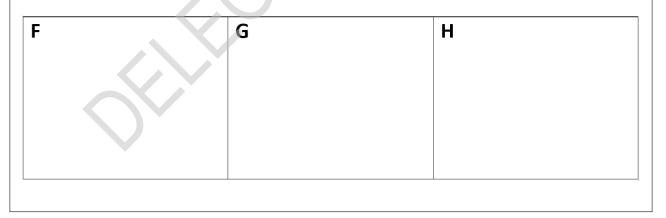
**Draw** one possible structure for each of **A** and **B**, including stereochemistry.



# $\begin{array}{l} \textbf{8.4} \ (2 \ \mathrm{pt}) \\ \underline{\textbf{Choose}} \\ \hline \textbf{the reagent(s) from the list that would be suitable as } \textbf{D}. \\ \hline \textbf{H}_2 C=CHMgBr \\ \hline \textbf{1. NaBH}_4 \ 2. \ \textbf{H}_2 C=CHLi \\ \hline \textbf{H}_2 C=CHBr, \ Pd(PPh_3)_4 \\ \hline \textbf{H}_2 C=CHMgBr, \ CuI \end{array}$

**8.5** (8 pt)

<u>Give</u> the structures of intermediates F, G, and H, including their stereochemistry.



## Theory





