

# DEGREE-I (HONS.)

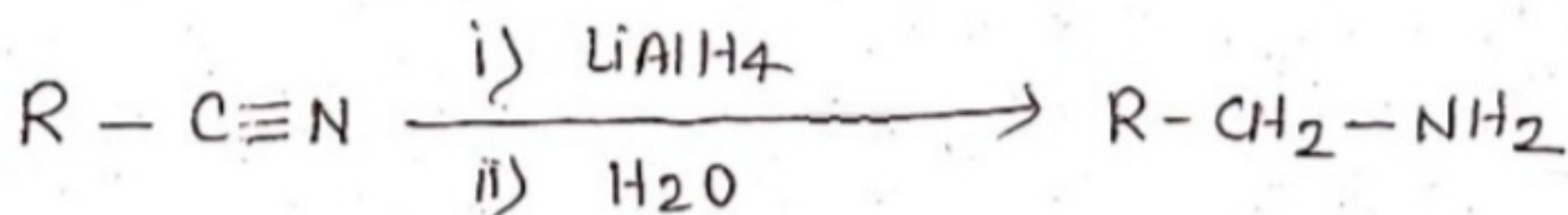
1.

21/10/2020

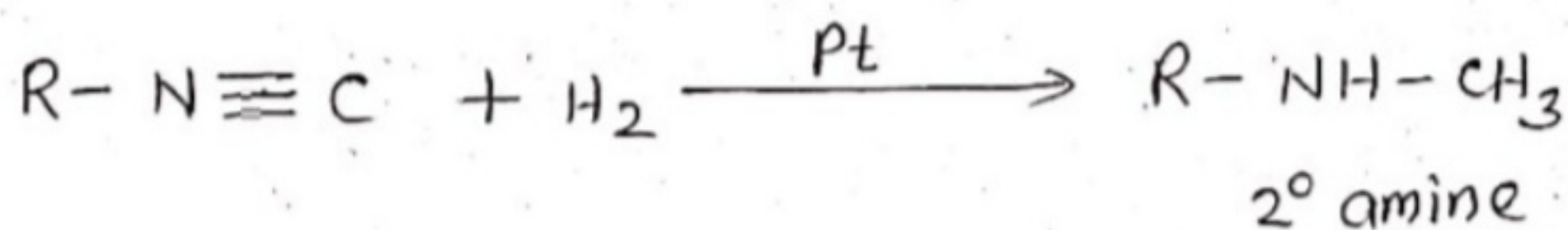
## Topic - Preparation & Properties of " AMINES "

### PREPARATION

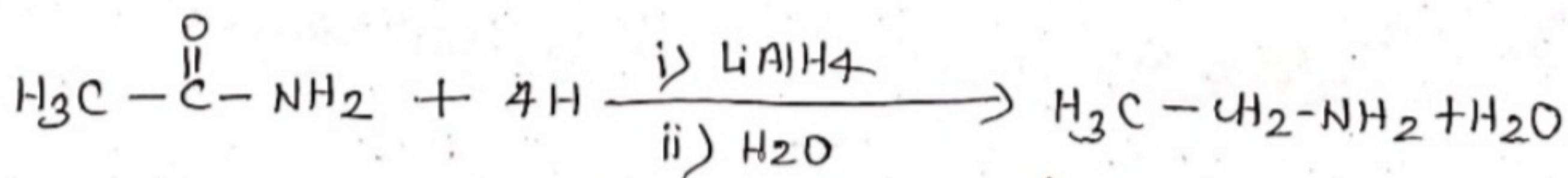
#### 1. By Reduction of Nitriles



#### 2. By Reduction of Isonitriles



#### 3. By Reduction of Amides

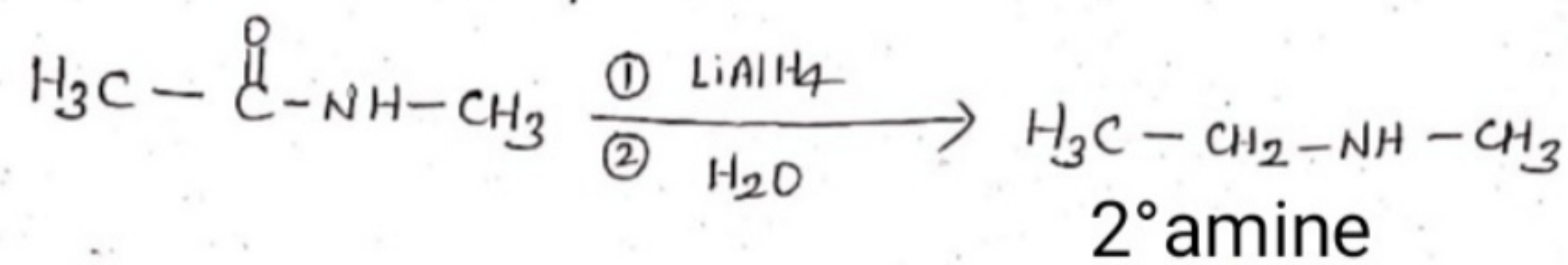


\* 1° amine can be obtained by reduction of simple amides with  $LiAlH_4$ .

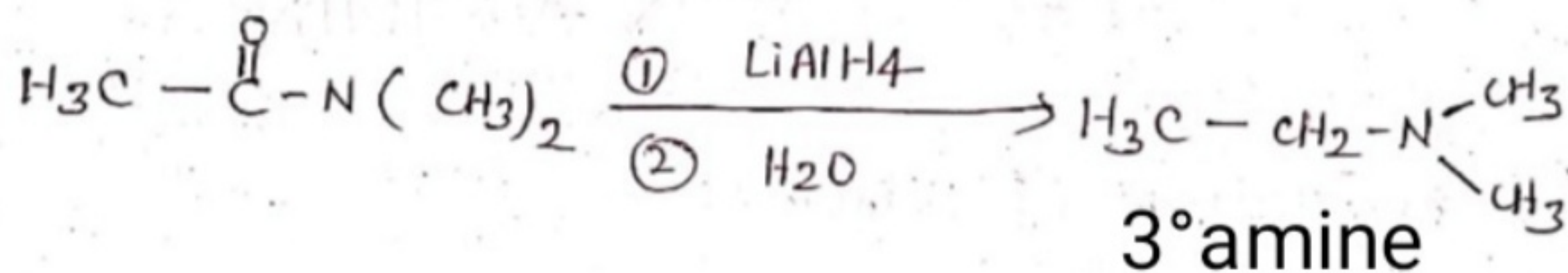
\* The product has same no. of carbon as the original amide.



\* 2° amine can be obtained by reduction of N-substituted amides with  $\text{LiAlH}_4$ .

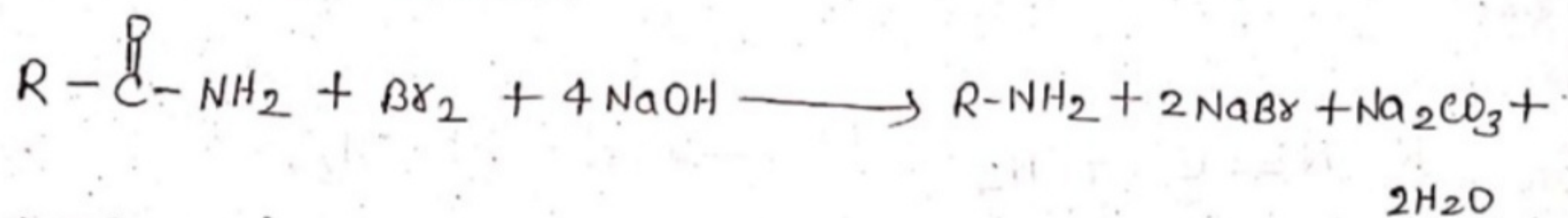


\* 3° amine may be obtained by reduction of N,N-disubstituted amides with  $\text{LiAlH}_4$ .



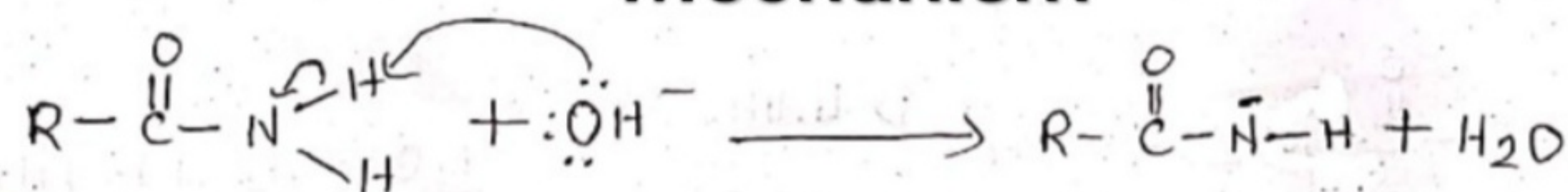
## 4. By Hoffman's Bromamide Reaction

The amide is warmed with bromine and concentrated aqueous  $\text{NaOH}$  solution.



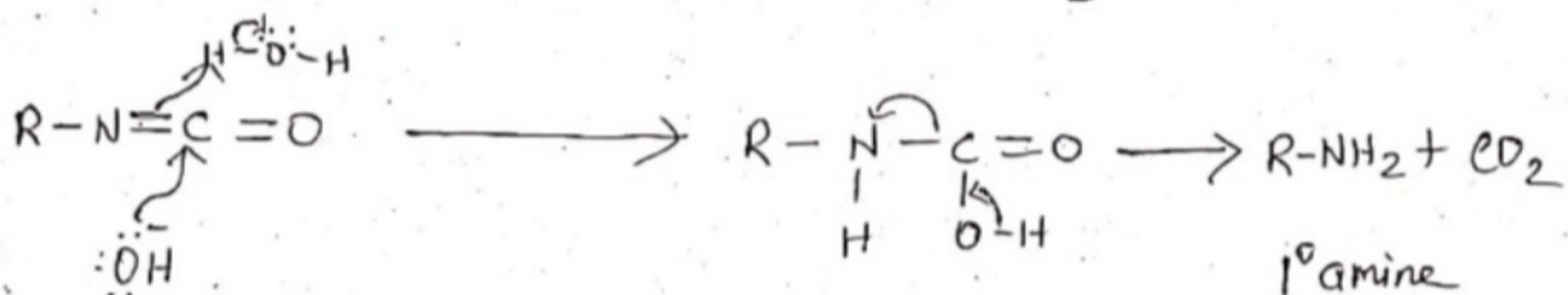
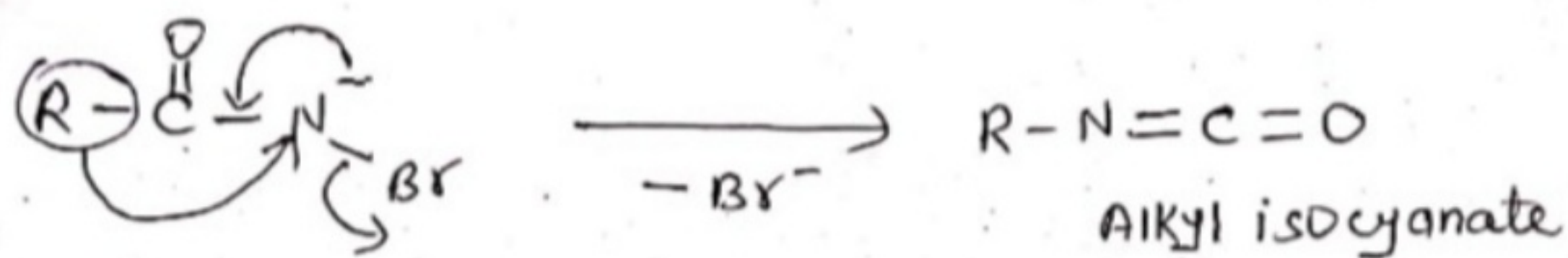
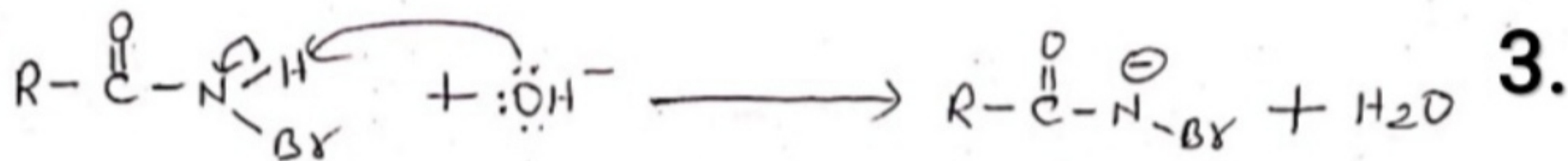
\* This reaction is also called Hofmann's Rearrangement.

### Mechanism



N-Bromamide

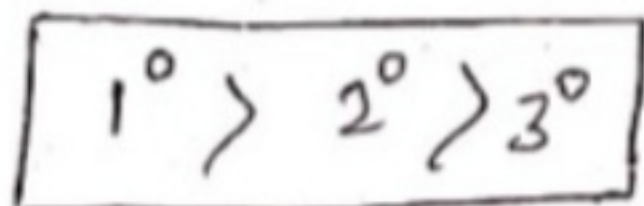




## PHYSICAL PROPERTIES

1. Lower amines are gases or low boiling liquids and possess a characteristic ammonia-like smell.

2. Boiling point



\* Primary amine has high boiling point due to 3-H bond while 3° amine has low boiling point due to no H-bonding.

## CHEMICAL PROPERTIES

### 1. Salt Formation

