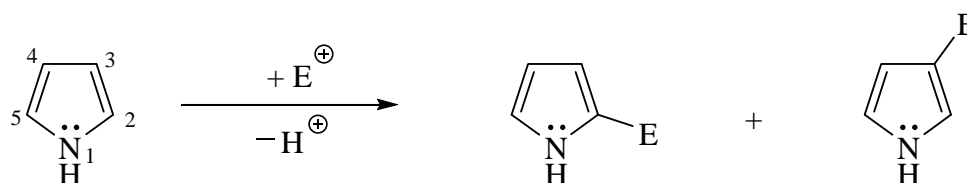


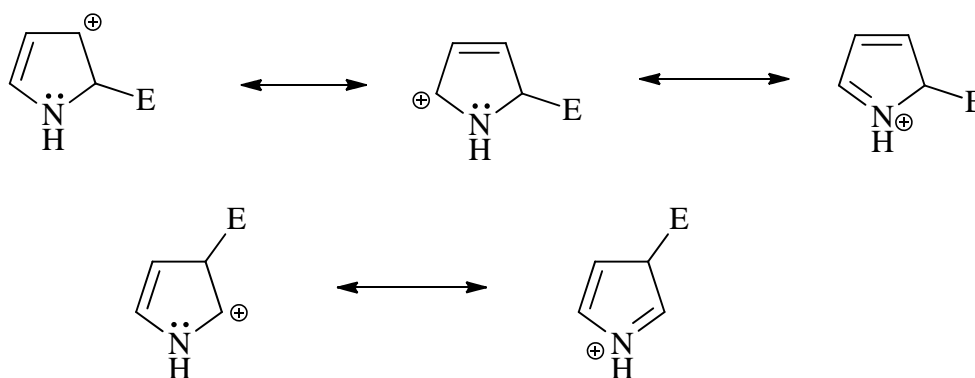
Marks
5

- In the electrophilic aromatic substitution (S_EAr) of pyrrole, the 2-substituted derivative is the major product.



Draw the cationic (Wheland-type) intermediate formed during reaction at the 2-position, and the equivalent intermediate formed during reaction at the 3-position. Using these structures, explain why reaction at the 2-position is faster, and leads to the major product.

Substitution at position 2 gives 3 canonical forms for the Wheland intermediate, versus only 2 for the substitution at position 3.



The intermediate with the greater number of resonance structures is the more stable and leads to the major product.