

- $\text{BF}_3$  is a Lewis acid in its reaction with diethyl ether. Explain what is meant by a Lewis acid and draw the product of this reaction.

**A Lewis acid is an electron pair acceptor.**

**$\text{BF}_3$  possess an empty  $p$ -orbital on B.  $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$  possess a lone pair on O.  $\text{BF}_3$  reacts with  $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$  by accepting this pair of electrons:  $\text{BF}_3$  acts as a Lewis acid and  $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$  acts as a Lewis base.**

