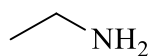
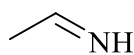
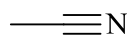


- Consider the amine **D**, imine **E** and nitrile **F** shown below. Draw any lone pairs of electrons that are required to complete the structures.

**Mark
s
3**

**D****E****F**

What is the hybridisation at *N* in compound **D**?

*sp*³

What is the hybridisation at *N* in compound **E**?

*sp*²

What is the hybridisation at *N* in compound **F**?

sp

Which of these compounds is the most basic? Why?

D is most basic. The *sp*³ hybridised N has more *p* orbital character (75%) compared to *sp*² (67%) or *sp* (50%). D therefore has a more diffuse lone pair that is more available for protonation.

THE REMAINDER OF THIS PAGE IS FOR ROUGH WORKING ONLY.