A.Dimethyl ether boils at -25°C whereas its isomer, ethanol boils at 78 °C. Explain this fact.

- B. Make a sketch showing how dimethyl ether is able to solvate a cation such as K^+ .
- C.Draw the structure of dimethylether, showing the 3-D shape at the oxygen. Include any non-bonding pairs. What is the hybridization at the central oxygen?

EXTRA CREDIT (Pick only one)

A. Suggest a mechanism for the reaction shown below:

OR

B.A chiral compound, X, was found to contain 87.8% C and 12.2 %H. X decolorizes Br_2 in CCl_4 . Upon catalytic hydrogenation, it gives Y which is achiral. The mass spectrum for X has a parent peak of m/e = 82 and the IR shows a strong stretch at 3300 cm⁻¹.