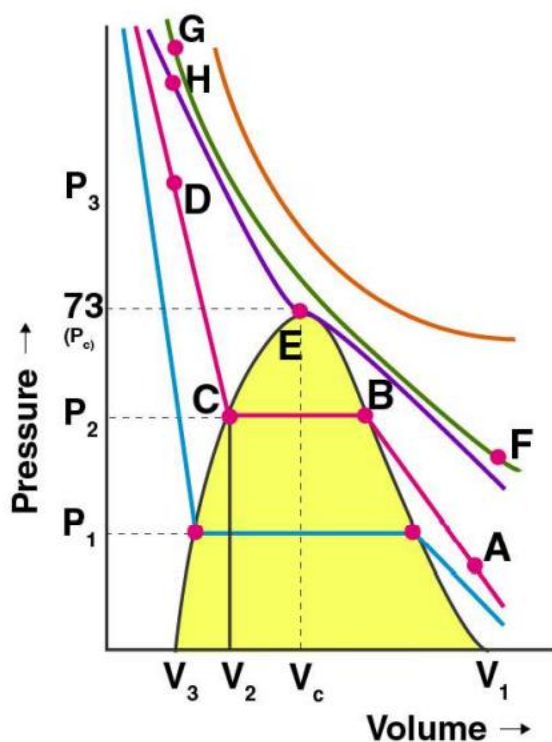


## Question 8

Isotherms of carbon dioxide gas are shown in the given Fig. mark a path for changing gas into liquid such that only one phase (I.e., either a gas or liquid) exists at any time during the change. Explain how the temperature, volume and pressure should be changed to carry out the change.

**Solution:**

By moving from A to F in the graph, the temperature increases and we reach a point G by compressing the gas at constant temperature along with the isotherm. The pressure increases at that instant. Then move vertically down towards D by lowering the temperature. The point when H is crossed, we get liquid. The process is carried at the critical temperature, the substance will remain in one phase only