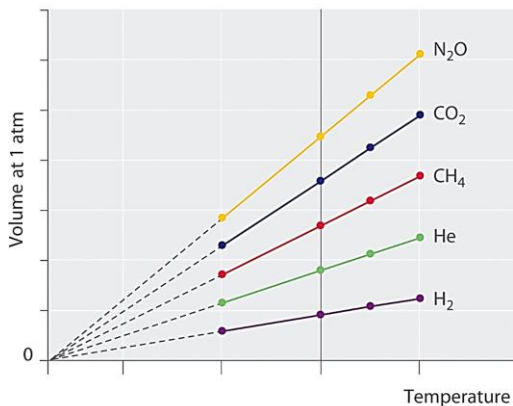


- 13 A student takes some measurements to plot graphs of volume versus temperature for different amounts of selected gases at 1 atm pressure, as shown in diagram below. He observed that all the plots extrapolate to the same point  $T_0$  on the temperature-axis, regardless of the type or the amount of the gas.



Which of the following rows are correct regarding  $T_0$ ?

|          | value of $T_0$ | nature of $T_0$   |
|----------|----------------|---|
| <b>A</b> | - 273.16 °C    | It is the temperature at which water exists in all of its three states.         |
| <b>B</b> | - 273.15 °C    | It is the temperature at which no more heat can be removed from a system.       |
| <b>C</b> | 0 °C           | It is the melting point of ice.   |
| <b>D</b> | 273.16 K       | It is the temperature at which the particles in a substance becomes motionless. |