

**1. Nov/2022/Paper\_12/No.14**

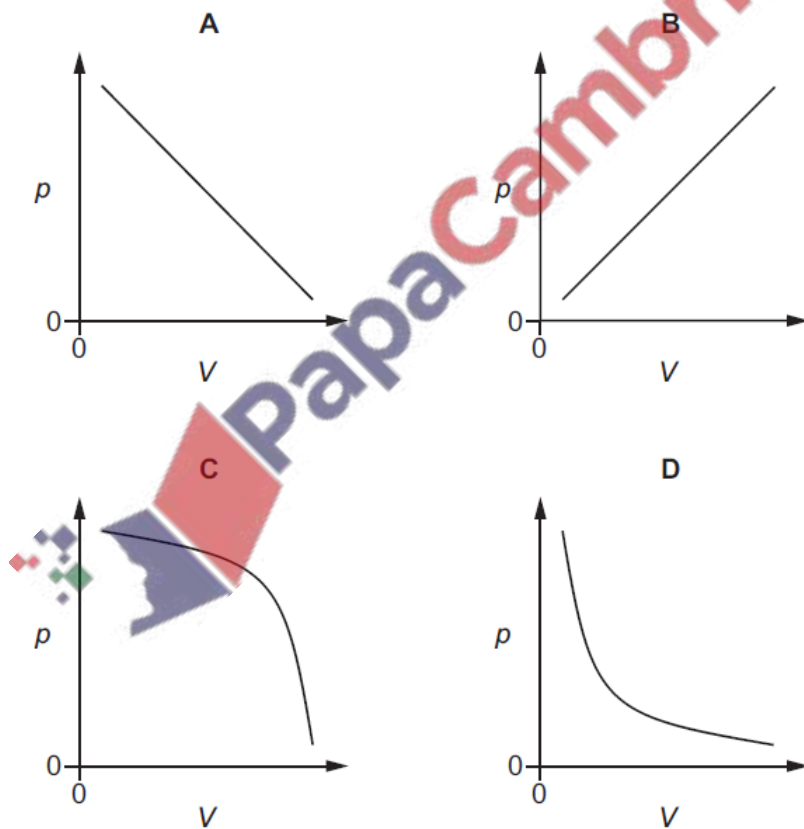
Each of the substances shown is gaseous.

Which substance is most likely to show ideal behaviour in the conditions shown?

	substance	temperature /K	pressure /Pa
<b>A</b>	carbon dioxide	250	$1.00 \times 10^5$
<b>B</b>	hydrogen chloride	1000	$1.00 \times 10^6$
<b>C</b>	nitrogen	1000	$1.00 \times 10^5$
<b>D</b>	oxygen	250	$1.00 \times 10^6$

**2. Nov/2022/Paper\_12/No.15**

Which graph represents the variation of pressure  $p$  and volume  $V$  of a sample of an ideal gas at constant temperature?



3. Nov/2022/Paper\_22/No.2(d)

(d) A 3.30 g sample of a Period 3 chloride is heated to 500 K in a sealed flask. At this temperature, the chloride is a gas of volume 250 cm<sup>3</sup> and the pressure in the flask is 323 kPa.

Use the ideal gas equation  $pV = nRT$  to calculate the  $M_r$  of the Period 3 chloride. Deduce its formula.

$M_r = \dots\dots\dots$

formula of Period 3 chloride =  $\dots\dots\dots$

[3]

