

PART 1 - CHEMISTRY

Topic : States of matter

SECTION-1 : (Maximum Marks : 4)

- This section contains **ONE** question.
- The answer to each question is a **NUMERICAL VALUE**.
- For each question, enter the correct numerical value of the answer (in decimal notation, truncated / rounded-off to the **SECOND DECIMAL PLACE**; e.g. 6.25, 7.00, -0.33, -.30, 30.27, -127.30) in the place designated to enter the answer.
- Answer to each question will be evaluated according to the following marking scheme :
Full Marks : +4 If ONLY the correct answer is entered;
Zero Marks : 0 In all other cases.

1. Molar volume (V_m) of a van der Waals gas can be calculated by expressing the van der Waals equation as a cubic equation with V_m as the variable. The ratio (in mol dm^{-3}) of the coefficient of V_m^2 to the coefficient of V_m for a gas having van der Waals constants $a = 6.0 \text{ dm}^6 \text{ atm mol}^{-2}$ and $b = 0.060 \text{ dm}^3 \text{ mol}^{-1}$ at 300 K and 300 atm is _____.

Use: Universal gas constant (R) = $0.082 \text{ dm}^3 \text{ atm mol}^{-1} \text{ K}^{-1}$

[JEE Advanced 2025 Paper 1]

Scan or tap for the
full solution

Space for Rough Work

**JEE ADVANCED STATES OF MATTER — VAN DER WAALS
EQUATION (CUBIC FORM) — PYQS**

Test Pattern : JEE (Advanced)

ANSWER KEY**SECTION-1**

Ques.	1														
Ans.	-7.2 to -7														