Assignment 3

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

1) The vapour pressure of a solid selenium is given by \( \log P (\text{mm}) = -7.440/T + 12.78 \) and of liquid selenium by \( \log P (\text{mm}) = -5300/T + 8.63 \). The triple point temperature (in °C) of selenium is

\( \begin{align*}
267.83 \\
347.87 \\
493.96 \\
200.98
\end{align*} \)

No, the answer is incorrect.
Score: 0
Accepted Answers: 220.88

2) The fugacity (atm) of \( \text{NH}_3 \) gas \( (b = 3.707 \times 10^{-2} \text{ L mol}^{-1}) \) at 29°C, having a true pressure of 10 atm, is

\( \begin{align*}
0.1033 \\
1.156 \\
15.67 \\
0.87
\end{align*} \)

No, the answer is incorrect.
Score: 0
Accepted Answers: 10.153

3) The latent heat of fusion of deuterium at 18.56 K is 47 cal mol\(^{-1}\). The slope of the heat of solidification of deuterium is 40.5 kg cm\(^{-2}\) mol\(^{-1}\). The difference between molar volume of solid and liquid deuterium (cm\(^3\) mol\(^{-1}\)) at this temperature is (Given 1 cal = 4.184 J, g = 9.8 ms\(^{-2}\)).

\( \begin{align*}
0.0025 \\
0.026 \\
2.669 \\
2.005
\end{align*} \)

No, the answer is incorrect.
Score: 0
Accepted Answers: 2.669

4) Which of the following term is not zero when ideal two gases are mixed together?

\( \begin{align*}
\Delta H_{\text{mix}} \\
\Delta S_{\text{mix}} \\
\Delta G_{\text{mix}} \\
\Delta U_{\text{mix}}
\end{align*} \)

No, the answer is incorrect.
Score: 0
Accepted Answers: \( \Delta G_{\text{mix}} \)

5) Standard chemical potential of oxygen at 500 K is 15 kcal mol\(^{-1}\). The volume is decreased to 2.46 L isothermally and the increase in free energy is found to be 1.342 kcal. The fugacity of oxygen (atm) is

\( \begin{align*}
0.9 \\
1.0 \\
0.46 \\
7.87
\end{align*} \)

No, the answer is incorrect.
Score: 0
Accepted Answers: 0.9

6) In the absence of any phase change, the change in entropy when a system is heated from \( T_1 \) to \( T_2 \) at constant pressure is given as

\( \begin{align*}
\Delta S &= \Delta H/(T_2 - T_1) - \Delta G/(T_2 - T_1) \\
&= \Delta U/(T_2 - T_1) \\
&= -\mu/(T_2 - T_1)
\end{align*} \)

No, the answer is incorrect.
Score: 0
Accepted Answers: \( \Delta S = \Delta H/(T_2 - T_1) \)