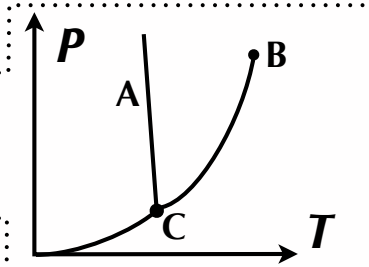
Physics 3410 Quiz 8

Please write the letter of the correct answer in the box provided. Name: _____

1. The latent heat L is proportional to the difference in … between the two phases?
A) Gibbs free energy *G* **B) entropy *S*** **C) volume *V***

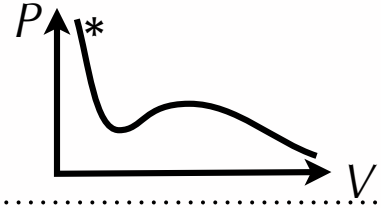


2. In the phase diagram shown, which labelled feature (A–C) explains why ice floats in water?

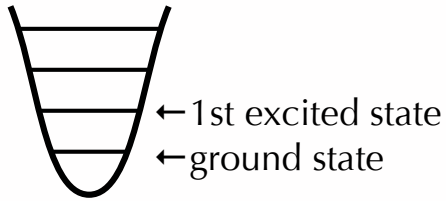
3. In the van der Waals formula, *b* represents the … gas molecules.
A) finite volume of **B) short-range attraction between**
C) long-range repulsion between

$$(P + a\frac{N^2}{V^2})(V - Nb) = NkT$$

4. The dip in the van der Waals *P*(*V*) graph indicates a liquid-gas phase change. The * represents a place where the fluid is a
A) liquid **B) gas**



5. Consider a harmonic oscillator in contact with a thermal reservoir. Can you make it hot enough so that the oscillator is more likely to be in the first excited state than the ground state?
A) yes **B) no**



6. The expression $e^{-\beta E}$ is called
A) Boltzmann factor **B) Gibbs free energy** **C) partition function**

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B

1. The latent heat L is proportional to the difference in … between the two phases?

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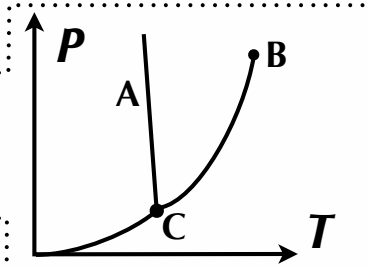

A

2. In the phase diagram shown, which labelled feature (A–C) explains why ice floats in water?

A

3. In the van der Waals formula, *b* represents the … gas molecules

A) finite volume of B) short-range attraction between
C) long-range repulsion between

$$(P + a\frac{N^2}{V^2})(V - Nb) = NkT$$

A

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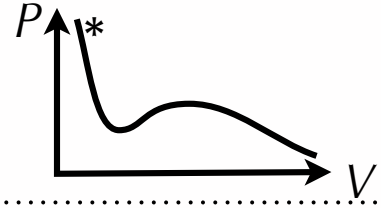
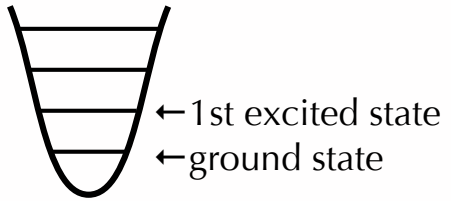


B

5. Consider a harmonic oscillator in contact with a thermal reservoir. Can you make it hot enough so that the oscillator is more likely to be in the first excited state than the ground state?

A) yes B) no



A

6. The expression $e^{-\beta E}$ is called

A) Boltzmann factor B) Gibbs free energy C) partition function