Unit 3 - Assignment 0

Assignment 0
The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-01-26, 23:59 IST.

1) In an FCC lattice how many nearest neighbors a given atom has?
   - 4
   - 6
   - 8
   - 12

   No, the answer is incorrect.
   Score: 0
   Accepted Answers: 12

2) If \( f(x) = \int_0^\infty xe^{-x^2} \, dx \), what is the correct value for \( f(x) \) if \( x \) is independent of \( t \)?
   - \( \frac{1}{x} \) for \( x \neq 0 \)
   - \( \frac{1}{e^x} \) for \( x \neq 0 \)
   - 1
   - 0

   No, the answer is incorrect.
   Score: 0
   Accepted Answers: \( \frac{1}{x} \) for \( x \neq 0 \)

3) If G, S, V, P and T represent Gibbs free energy, entropy, volume, pressure and temperature respectively, which of the following is the correct expression for differential of G?
   - \(-dS + V \, dp\)
   - \(-dS + P \, dV\)
   - \(-dS + P\)
   - \(-dS + V\)

   No, the answer is incorrect.
   Score: 0
   Accepted Answers: \(-dS + V \, dp\)

4) Which of the following is true during an irreversible process?
   - Entropy of the system can only increase
   - Entropy of the system remains constant
   - Entropy of universe can only increase
   - Entropy of the system can only decrease

   No, the answer is incorrect.
   Score: 0
   Accepted Answers: Entropy of universe can only increase

5) If there are 16 A-type atoms, which are indistinguishable among themselves and 9 B-type atoms, which are indistinguishable among themselves and they have to be arranged randomly on a 5x5 square lattice, what are the total number of configurations possible?
   - 2042975
   - 189295
   - 25
   - 144

   No, the answer is incorrect.
   Score: 0
   Accepted Answers: 2042975

6) In Fick's first law expression, if the flux is expressed in moles/cm²-s and concentration gradient in moles/cm², which of the following unit should be used for diffusivity?
   - m²/s
   - cm²/s
   - m/s
   - cm/s

   No, the answer is incorrect.
   Score: 0
   Accepted Answers: cm²/s