

Course outline

How does an NPTEL online course work?

Week-01

Week-02

Week-03

Week-04

Week-05

Lecture 10- Surfaces and Interfaces -(II)

Lecture 11-Thermodynamics of Nanomaterials

Feedback for Week 5

Quiz: Week-05: Assignment-05

Week-05: Assignment-05 Solution

Week-06

Week-07

Week-08

Week-09

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Week-11

Week- 12

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Week-05: Assignment-05

The due date for submitting this assignment has passed.

Due on 2021-09-01, 23:59 IST.

As per our records you have not submitted this assignment.

1) The slope of the Gibbs free energy G versus T curve at 0 K and constant pressure is

1 point

- 0
 H_0
 S_0
 $-H$

No, the answer is incorrect.
Score: 0

Accepted Answers:
0

2) Gibbs free energy vs composition curve of a solution is_____in nature.

1 point

- Parabolic
 Straight line
 Hyperbolic
 Circular

No, the answer is incorrect.
Score: 0

Accepted Answers:
Parabolic

3) At constant pressure, the entropy of a system increases with_____temperature.

1 point

- Decreases
 Increase
 both of above
 Independent

No, the answer is incorrect.
Score: 0

Accepted Answers:
Increase

4) The entropy becomes zero at 0°C for a

1 point

- Pure element
 Perfect crystal
 Random solid solution
 None of above

No, the answer is incorrect.
Score: 0

Accepted Answers:
None of above

5) A system is said to be at equilibrium if the entropy of the system has reached_____value

1 point

- 0
 Minimum
 Maximum
 It cannot be defined

No, the answer is incorrect.
Score: 0

Accepted Answers:
Maximum

 6) The latent heat of fusion of ice, $H = 6.02 \text{ kJ/mol}$, calculate the entropy increase when one mole of ice melts into the water at 0°C.

1 point

- 0
 22.04 J/mol.K
 220.04 J/mol.K
 250.04 J/mol.K

No, the answer is incorrect.
Score: 0

Accepted Answers:
22.04 J/mol.K

7) Which of the following is not correct for ideal solutions?

1 point

- $\Delta H_{\text{mix}} = 0$
 $\Delta G = -T\Delta S$
 $\Delta V_{\text{mix}} = 0$
 $\Delta T = 0$

No, the answer is incorrect.
Score: 0

Accepted Answers:
 $\Delta T = 0$

8) Tangent to the G vs. X curve gives us:

1 point

- Enthalpy
 Internal energy
 Entropy
 Chemical potential

No, the answer is incorrect.
Score: 0

Accepted Answers:
Chemical potential

9) Change in Gibbs free energy is_____related to interfacial energy and_____related to the radius of nanoparticle size.

1 point

- inversely, inversely
 directly, inversely
 directly, directly
 inversely, directly

No, the answer is incorrect.
Score: 0

Accepted Answers:
directly, inversely

10) As the radii of the particles decreases, surface atoms are expected to melt_____the melting point of the bulk atoms.

1 point

- Below
 Above
 Equal
 Independent

No, the answer is incorrect.
Score: 0

Accepted Answers:
Below