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NPTEL

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Courses » Heat Treatment and Surface Hardening-I

Announcements Course Ask a Question Progress



Unit 3 - Week-2

Course outline

How to access the portal ?

Week-1

Week-2

Thermodynamics of Phase Transformation and Driving Force for Phase Transformation

Finding Value of Driving Force (ΔG) and Single Component (liquid-solid)

Finding Value of Driving Force (ΔG) and Nucleation Single Component (liquid-solid)

Nucleation Treatment Single Component (Solid-Liquid) - I

Nucleation Treatment Single Component (Solid-Liquid) - II

Quiz : Assignment-2

Week 2 Feedback

Assignment-2 solution

Week-3

Week-4

Assignment-2

The due date for submitting this assignment has passed. **Due on 2018-02-21, 23:59 IST**
As per our records you have not submitted this assignment.

1) For some arbitrary reaction, the change in free energy is negative ($\Delta G < 0$). Then, which one of the following statements is correct 1 point

- (a) The reaction is spontaneous but it may or may not happen of its own.
- (b) The reaction is spontaneous and will happen of its own.
- (c) The reaction is non-spontaneous and will happen of its own.
- (d) None of these

No, the answer is incorrect.

Score: 0

Accepted Answers:

(a) The reaction is spontaneous but it may or may not happen of its own.

2)

1 point

No, the answer is incorrect.

Score: 0

Accepted Answers:

3) By examining the schematic plots shown below, identify the correct answer. 1 point

- (a) plot (a) represents H vs. T (K) plot, plot (b) represents C_p vs. T (K) plot and plot (c) represents S vs. T (K) plot.
- (b) plot (a) represents S vs. T (K) plot, plot (b) represents H vs. T (K) plot and plot (c) represents C_p vs. T (K) plot.
- (c) Plot (a) represents C_p vs. T (K), plot (b) represents S vs. T (K) and Plot (c) represents H vs. T (K) plot.
- (d) plot (a) represents C_p vs. T (K) plot, plot (b) represents H vs. T (K) plot and plot (c) represents S vs. T (K) plot.

Week-5

Week-6

Week-7

Week-8

No, the answer is incorrect.**Score: 0****Accepted Answers:***(d) plot (a) represents C_p vs. $T(K)$ plot, plot (b) represents H vs. $T(K)$ plot and plot (c) represents S vs. $T(K)$ plot.*

4)

1 point

- (a) 47300-47400 J
- (b) 77300-77400 J
- (d) 87300-87400 J
- (d) 97300-98000 J

No, the answer is incorrect.**Score: 0****Accepted Answers:***(a) 47300-47400 J*5) 

1 point

- (a) Increase in term II but decrease in the term I.
- (b) Increase in the term I but decrease in term II.
- (c) Both the terms increase.
- (d) Both the terms decrease.

No, the answer is incorrect.**Score: 0****Accepted Answers:***(b) Increase in the term I but decrease in term II.*6) 

1 point

- +V
- V
- +S
- S

No, the answer is incorrect.**Score: 0****Accepted Answers:***-S*

7)

1 point

- +V
- V
- +S
- S

No, the answer is incorrect.**Score: 0****Accepted Answers:***+V*

8)

1 point

-
-
- 
-





No, the answer is incorrect.

Score: 0

Accepted Answers:

9)



No, the answer is incorrect.

Score: 0

Accepted Answers:

10Q10 By carefully examining the schematic plot shown below for pure metal, identify the correct statement for specific heat capacity (C_p) at $T=T_m$. 1 point

- (a) The specific heat capacity is zero at $T=T_m$.
- (b) The specific heat capacity is infinite at $T=T_m$.
- (c) The specific heat capacity is given by some finite value at $T=T_m$.
- (d) None of these.

No, the answer is incorrect.

Score: 0

Accepted Answers:

(b) The specific heat capacity is infinite at $T=T_m$.

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