Assignment 3

1) liquid + (alpha) phase = (beta) phase is a _____ reaction.   *1 point*

- ○ Eutectic
- ○ Peritectic
- ○ Monotectic
- ○ Syntectic

Accepted Answers:
Peritectic

2) Which of the following phase diagram shows liquid immiscibility ?   *1 point*

- ○ Eutectic
- ○ Peritectic
- ○ Monotectic
- ○ Eutectoid
- ○ None of these

Accepted Answers:
Monotectic

3) Application (or increase) of pressure will result in _____ in melting temperature of water. *1 point*

- ○ Increase
- ○ Decrease
- ○ Remains constant
- ○ Can't be defined

Accepted Answers:
Decrease

4) Change in Gibbs free energy is _____ related to interfacial energy and _____ related to   *1 point*
radius of precipitate.

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

○ inversely, inversely

Accepted Answers:
directly, inversely

5) Low angle tilt boundary is an array of _____ .   *1 point*

○ screw dislocations
○ edge dislocations
○ vacancies
○ stacking faults

Accepted Answers:
edge dislocations

6) The thermodynamic driving force for diffusion is :   *1 point*

○ concentration gradient
○ chemical potential gradient
○ temperature gradient
○ none of these

Accepted Answers:
chemical potential gradient

7) Interstitial diffusion is _____ than vacancy diffusion.   *1 point*

○ rapid
○ sluggish
○ both have same velocity
○ none of these

Accepted Answers:
rapid

8) Diffusion flux is _____ .   *1 point*

○ scalar
○ vector
○ dimensionless
○ tensor of rank 3

Accepted Answers:
vector

9) This equation is known as :   *1 point*

○ Clausius
○ Clausius Clapeyron
○ Gibbs Duhem
○ None of these

Accepted Answers:

Clausius Clapeyron

$$\frac{\mathrm{d}P}{\mathrm{d}T} = \frac{\Delta H_{\mathrm{H}}}{T\Delta V}$$

10) Concentration vs Distance plots resemble _____ .   *1 point*

○ Lognormal distribution

○ Binomial distribution

○ Lorentzian distribution

○ Gaussian distribution

Accepted Answers:
Gaussian distribution