

Assignment 12

1) If the alloy lies outside the spinodal, small variations in composition lead to an increase in free energy and the alloy is therefore ____ **1 point**

- Unstable
- Stable
- Metastable
- No effect

Accepted Answers:

Metastable

2) Outside the spinodal the transformation must proceed by the process of **1 point**

- No nucleation and high growth
- High nucleation and no growth
- No nucleation and growth
- Nucleation and growth

Accepted Answers:

Nucleation and growth

3) For calculating the wavelength of composition fluctuations, it is necessary to consider important factor.. **2 points**

- Interfacial effect
- Coherency strain energy effects
- Interfacial energy and coherency strain energy effects
- None of them

Accepted Answers:

Interfacial energy and coherency strain energy effects

4) When supersaturated matrix transformed into the mixture same phase but with a lower thermodynamic excess of solute and the equilibrium precipitate, then this kind of transformation is known as **1 point**

- Precipitation hardening

- Cellular precipitation
- Peritectoid reaction
- Monotectic reaction

Accepted Answers:*Cellular precipitation*

5) Cellular precipitation is also known as

2 points

- Discontinuous precipitation
 - Continuous precipitation
 - Spiral precipitation
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- None of these

Accepted Answers:*Discontinuous precipitation*

6) What is the young modulus of partially stabilized zirconia?

2 points

- 170-210 GPa
- 3000-4000 GPa
- 20-70 GPa
- 150-900 MPa

Accepted Answers:*170-210 GPa*

7) Which of the following decreases the recrystallization temperature ?

1 point

- i. increase in amount of cold work
 - ii. decrease in amount of cold work
 - iii. increase in annealing time
 - iv. decrease in annealing time
- only i and iv
 - only ii and iii
 - only i and iii
 - only i

Accepted Answers:*only i and iii*

