Assignment 11

1) Solid solutions with ____ enthalpy of mixing show tendency to form ordered phases at low temperatures.
   - Negative
   - Positive
   - Zero
   - Sometimes negative, sometimes positive

**Accepted Answers:**
- Negative

2) B2 structure has ____ lattice.
   - Simple cubic
   - BCC
   - FCC
   - HCP

**Accepted Answers:**
- Simple cubic

3) Polygonized subgrain structure is obtained _______.
   - before recovery
   - after recovery and before recrystallization
   - after recrystallization and before grain growth
   - after grain growth

**Accepted Answers:**
- after recovery and before recrystallization

4) XRD patterns of __________ structures give rise to superlattice reflections.
   - only ordered
   - only disordered

**Accepted Answers:**
5) Massive transformation is also known as
i. diffusional transformation
ii. diffusionless transformation
iii. civilian transformation
iv. military transformation

- only i and iv
- only i and iii
- only ii and iii
- only ii and iv

Accepted Answers:
only ii and iii

6) Which of the following statements are true?
   i. recrystallization alters the dislocation density
   ii. recovery alters the dislocation density
   iii. Recrystallization temperature is higher than the recovery temperature
   iv. Recrystallization temperature is lower than the recovery temperature

- only i
- only i and iii
- only i and iv
- only ii and iii

Score: 0

Accepted Answers:
only i and iii

7) Which of the following decreases the recrystallization temperature?
   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

No, the answer is incorrect.
Score: 0

Accepted Answers:
only i and iii

8) Which of the following is true for recovery?
   i. dislocation density is doubled
   ii. dislocation density remains unchanged
   iii. residual stresses are removed
   iv. residual stresses are unchanged

- only i
- only i and iii
- only i and iv
- only ii and iii
9) The gamma to alpha transformation in iron can be massive if the cooling rate is ____.
   i. High enough to avoid transformation near equilibrium
   ii. slow enough to avoid formation of martensite
   iii. slow enough to avoid transformation near equilibrium
   iv. high enough to avoid formation of martensite

   Accepted Answers:
   only ii and iii

10) Which of the following would negate the effect of cold working?

   Accepted Answers:
   only i and ii

   Accepted Answers:
   annealing