

Selected Questions from Past Test

Multiple Choice

1. Which of the following bond types is characterized by shared electrons in the bond?

- (a) covalent (b) metallic (c) ionic (d) van der Waals

2. Which of the following is not a point defect?

- (a) interstitial atom (b) substitutional atom (c) edge dislocation
(d) none of these are point defects

3. Which of these does not affect diffusion for a case that is described by Fick's first law?

- (a) temperature (b) concentration (c) number of vacancies (d) time

4. A dislocation with a Burger's vector that is perpendicular to the dislocation line is

- (a) an edge dislocation (b) a screw dislocation (c) a mixed dislocation
(d) can be either a) or b)

Problems

1. Rhodium has an FCC crystal structure, an atomic radius of 0.1345 nm and an atomic weight of 102.9 g/mol. Calculate the density of rhodium.

- (a) 6.20 g/cm³ (b) 9.30 g/cm³ (c) 12.4 g/cm³ (d) 24.82 g/cm³

2. How many moles are there in 1 liter of water? Water has a density of 1 g/l.