

# Quiz

1. What is a solid solution?
2. How many types of solid solutions are there? Give examples for each of them?
3. What are Hume-Rothery rules?
4. If two metals have very different electronegativity will they form a solid solution?
5. How does valence of an element affect the solid solubility?
6. What is an ideal solution?
7. What is clustering?
8. What is ordering?
9. What is an intermetallic compound?
10. What is Hume-Rothery phase?
11. What is Laves phase?
12. What is sigma phase?
13. What kind of metals form carbides?
14. The atomic radius of Cu is 0.128 nm and electronegativity is 1.8. What is the probability of lead, Pb (atomic radius 0.175 nm, electronegativity 1.6) and zinc, Zn (atomic radius 0.133 nm, electronegativity 1.7) forming solid solution with copper?
15. Predict the relative degree of solid solubility of the following elements in Fe ( $r = 0.124$  nm, electronegativity 1.7). Ni (atomic radius,  $r = 0.125$  nm, electronegativity 1.8), Cr ( $r = 0.125$  nm, electronegativity 1.6), Ti ( $r = 0.147$  nm, electronegativity 1.3)