

本試題是否可以使用計算機：可使用，不可使用（請命題老師勾選）

1. Please describe and explain five types of interfacial defects (10%)
2. Draw and explain lattice parameter relationships and figures showing unit cell geometries for the seven crystal systems (10%)
3. (a) Define engineering stress and engineer strain. (b) Compare the engineering stress and true stress. (10%)
4. Write the method to calculate the diffusion coefficient for materials, and explain why the diffusion coefficient would change in different temp. (10%)
5. Draw unit cells for face-centered cubic (FCC), body-centered cubic (BCC), and hexagonal closed-packed (HCP) crystal structures. (10%)
6. (a) Describe and explain Fick's first law, (b) Describe and explain Fick's second laws. (10%)
7. For each of edge and screw dislocations: (a) describe and make a drawing of the dislocation, (b) note the location of the dislocation line, and indicate the burger vector. (10%)
8. Describe and explain (a) Isothermal transformation diagrams, (b) Continuous cooling transformation diagrams. (10%)
9. How to manufacture the amorphous metallic foil? (10%)
10. Describe the structure and property of (a) Fullerenes, (b) Carbon tube. (10%)