

淡江大學八十八學年度碩士班招生考試試題

系別：化學工程學系

科目：材料科學

本試題共 $\frac{1}{2}$ 頁

- 20分 1. The enthalpy of atomization of diamond is 713 kJ mol^{-1} . The listed bond energy is 347 kJ mol^{-1} . How do you reconcile this difference?
- 20分 2. What are the degrees of freedom of a system of two components, when the number of phases is one, two, and three?
- 20分 3. Assuming the oxidation of a metal to be controlled by the diffusion of oxygen anions through the oxide layer, find the functional dependence of oxide thickness x on time t .
- 20分 4. Find the Miller indices of a plane that makes an intercept of 1 on a -axis and 2 on b -axis and is parallel to c -axis.
- 20分 5. Find the equilibrium concentration of vacancies in aluminium at 0 K and 300 K. The enthalpy of formation of vacancies is 68 kJ mol^{-1} .