

編號： 423

國立成功大學九十七學年度碩士班招生考試試題

共 / 頁，第 / 頁

系所：口腔醫學研究所丙組

科目：材料科學

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）

考試日期：0302，節次：2

1. Describe and explain nine forms of corrosion. (10%)
2. Make schematic plots of three characteristic stress-strain behaviors observed for polymeric materials, and explain. (10%)
3. Name and describe eight different ionic point defects that are found in ceramic compounds. (10%)
4. Define *hardenability*, and how to measure the *hardenability*? (10%)
5. Copper has an atomic radius of 0.128 nm, density of 8.89 g/cm<sup>3</sup>, and an atomic weight of 63.5 g/mol. Determine whether it has an BCC or FCC crystal structure. (10%)
6. Briefly explain (a) solid solution strengthen, (b) recrystallization and its temperature, (c) eutectoid and peritectic reaction, (d) phase diagram, (e) intrinsic semiconducting materials. (20%)
7. Describe the four possible electron band structures for solid materials. (10%)
8. Describe and diagram the sintering process of powder particle aggregates. (10%)
9. Describe and sketch the diffusion path for atomic migration in solids. (10%)