編號： 360

國立成功大學 104 學年度碩士班招生考試試題

系所組別：口腔醫學研究所丙組

考試科目：材料科學

考試日期：0212，節次：2

※ 考生請注意：本試題不可使用計算機。 請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

1. For the hexagonal close-packed crystal structure, show the ideal c/a ratio is 1.633. (a and c represent the short and long edge lengths, respectively) **(15%)**
2. Please explain why the ceramic show better corrosion resistance than metal. **(10%)**
3. Please explain why HCP (hexagonal closed-packed) metals are typically more brittle than FCC (face-centered cubic) and BCC (body-centered cubic) metals. **(15%)**
4. Please describe eight different ionic point defects that are found in ceramic compounds **(10%)**
5. If the cold-worked brass is preformed by the annealing treatment. What is the driving force for recrystallization and grain growth? **(10%)**
6. Describe and make a drawing of the edge, screw, and mixed dislocation. **(10%)**
7. (a) Define engineering stress and engineer strain. (b) Compare the engineering stress and true stress. **(10%)**
8. What is higher yield strength or tensile strength? Why? **(10%)**
9. Describe and diagram the sintering process of powder particle aggregates. **(10%)**