

# 中山醫學大學 100 學年度碩士班入學招生考試試題

口腔科學研究所碩士班（甲組）

考試科目：基礎材料學

時間：80 分鐘

※請注意本試題共( 1 )張，如發現頁數不足，應當場請求補齊，否則缺頁部份概以零分計算。 第( 1 )頁

本試題共七大題，總分 100 分。

1. Explain the following items: (20%)
  - (a) Linear coefficient of thermal expansion
  - (b) Fatigue strength
  - (c) Galvanic corrosion
  - (d) Glass transition temperature
2. List and explain the primary atomic bonds (15%)
3. Draw the stress-strain curves for a metal, ceramic and polymer, and indicate the yield strength, plastic deformation, modulus of elasticity on those curves. (15%)
4. A metal bar 4 mm in diameter with a gauge length of 50 mm is pulled in tensile to failure. After failure, the gauge length is 80 mm and the diameter is 3mm. Calculate the percent elongation after failure, and the percent area reduction. (10%)
5. Compare the properties of “toughness” and “hardness” , and provide examples. (15%)
6. Define wetting. Include in the definition a drop of liquid and the contact angle formed with the surface. (10%)
7. Describe a polymerization reaction and how the properties of monomers compare with those of polymers. (15%)