共 8 題，總分為 100 分

1. A force of 10,000 Newtons has caused a 1 cm × 1 cm bar of magnesium metal to stretch from 10 cm to 10.045 cm. Please calculate the modulus of elasticity in GPa.　(10 分)

2. A 0.4-inch diameter, 6-inch long titanium metal bar has a yield strength of 50,000 psi, a modulus of elasticity of 1.6×10^7 psi, and Poisson's ratio of 0.30. Please determine the length and diameter of the bar when a 500-lb load is applied.　(20 分)

3. What are (a) eutectic, (b) eutectoid, and (c) peritectoid reactions in binary alloys?　((a), (b), and (c) 各 5 分, 計 15 分)

4. Why the longer the wire for heavy loading in constructions, the smaller the load for failure?　(10 分)

5. Define Frenkel and Shottky defects in ceramics.　(10 分)

6. Draw the crystal structure of rock salt (NaCl).　(10 分)

7. What are metal fabrication methods?　(15 分)

8. What is solubility limit in phase equilibriums?　(10 分)