

※ 考生請注意：本試題不可使用計算機

I 解釋名詞 (文字敘述或圖示)：(70 分，每題 2 分)

1. Absorption coefficient
2. Advanced ceramics
3. Age hardening
4. Poisson's ratio
5. Anelasticity
6. Ball bearing
7. Carbon nanotube
8. Cemented carbide
9. Cleavage
10. Conduction band
11. Corrosion fatigue
12. Crosslinking
13. Degree of polymerization
14. Diamond cubic structure
15. Electron mobility
16. Engineering stress
17. Eutectic structure
18. Fluorite structure
19. Frenkel defect
20. Glass fiber
21. Graphite
22. Honeycomb structure
23. Interfacial energy
24. Intrinsic semiconductor
25. Ionic radii
26. Knoop hardness
27. Light-emitting diode
28. Nanotechnology
29. Phase transformation rate
30. Polar molecule
31. Powder metallurgy
32. Rupture
33. Shot peening
34. Slip plane
35. Super alloy

(背面仍有題目,請繼續作答)

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II 簡答題 (30 分，每題 10 分)

1. Explain how grain boundaries impede dislocation motion and why a metal having small grains is stronger than one having larger grains
2. Write Fick's first and second law in equation form, and define all parameters.
3. Briefly describe the two techniques that are used for galvanic protection.