

※ 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. Define an exothermic reaction and endothermic reaction. Give an example of each. (10%)
2. Please describe and explain (a) First law of thermodynamics and (b) Second law of thermodynamics. (10%)
3. Please describe and explain (a) Boyle's law and (b) Pauli exclusion principle. (10%)
4. Describe and explain the photoelectric effect and its application. (10%)
5. How do the pressure and temperature effect on chemical equilibrium? (10%)
6. Explain Millikan's oil-drop experiment. (10%)
7. What is a fuel cell? Describe an example. (10%)
8. Describe and explain the Haber process. (10%)
9. Describe the relation between atomic electron structure and Nuclear Magnetic Resonance (NMR). (10%)
10. Write the complete ground-state electron configuration of the strontium atom, Zn, using the building-up principles.(Zn atomic number:30)(10%)