

國立高雄師範大學 101 學年度學士班轉學生招生考試試題

系所別：化學系、生物科技系二年級

科 目：普通化學

※注意：1.不必抄題，作答時請將試題題號及答案依照順序寫在答案卷上，於本試題上作答者，不予計分。

2.限用藍色或黑色之鋼筆、原子筆作答，以鉛筆或其他顏色作答者不予計分。

1. Arrange the following in order of increasing base strength in aqueous solution: CH_3S^- , OH^- , and CF_3S^- . (6%)
2. Write noble-gas core ground-state electron configurations for the following elements: (8%)
(1) chromium (2) lead (3) copper (4) calcium
3. An element has the following first through fourth ionization energies in $\text{MJ}\cdot\text{mol}^{-1}$:
0.7, 1.5, 7.7, 10.5.
Deduce to which group in the periodic table it probably belongs. Give your reasoning. (6%)
4. Suppose that you discovered some material from another universe that obeyed the following restrictions on quantum numbers:
 $n > 0$
 $0 < l \leq n$
 $m_l = +l$ or $-l$
 $m_s = +1/2$
Assume that Hund's rule still applies. What would be the atomic numbers of the first three noble gases in that universe? (15%)

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