

大同大學 105 學年度(寒)轉學入學考試試題

考試科目:化學

所別:材料工程學系

第 全 頁

註:本次考試 不可以參考自己的書籍及筆記; 不可以使用字典; 不可以使用計算器。

1. 請寫10個週期表金屬元素的元素符號(中,英文縮寫): (20%)

- (a) Cobalt, (b) Tin, (c) Copper, (e) Gold, (f) Zinc,
(g) Titanium (h) Sodium, (i) Lead, (j) Silver, (k) Iron

2. 一大氣壓下,物質沸點的高低,通常可由液體內粒子間作用力的大小來判斷。試問下列物質沸點高低的比較,是何作用力? (20%)

- (A) 氮的沸點高於氫
(B) 乙酸的沸點高於乙醇
(C) 甲胺的沸點高於氟甲烷
(D) 正庚烷的沸點高於正丁烷

3. 請寫出 Units of Pressure (10 %)

4. 翻譯: (20%)

(a) **Pollution from Petroleum Combustion : The end product of air pollution from unburned petroleum in the air is known as photochemical smog.**

(b) **Pollution from the Production of Electricity: Burning coal for electricity production is a major source of pollution. Coal contains significant quantities of sulfur, which, upon burning, produces sulfur dioxide. Sulfur trioxide is produced upon further oxidation. When this combines with water droplets, it can form sulphuric acid and eventually cause acid rain.**

5. Explained the follow terms: (必須詳述其物理意義及相關公式) (各3分共 30%)

- (1) Molarity (M) Molality(m) (2) Effusion and diffusion (3) Root Mean Square Velocity (4) Intermolecular Forces (5) Exothermic (6) Intramolecular Forces (7) Hard water (8) Endothermic (9) Hydrophilic, (10) Hydrophobic