

大同大學 九十三年 學年度研究所碩士在職班入學考試試題

考試科目：科技英文

所別：化學工程研究所

第 1 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。
請將下列文章以中翻英及英翻中的方式進行作答。

1. Engineers are employed in many industries in which raw materials are converted to products by chemical reactions and physical changes. Some industries depending upon chemical changes are the manufacture of sulfuric acid from sulfide ores, the production of ammonia, and the conversion of petroleum into a variety of petrochemicals. In other industries, such as the production of sugar from sugar beets or the extraction of oil from corn, physical changes predominate. Most industrial operations consist of a sequence of physical and chemical transformations, and this sequence is called a process.
2.
 - (a) Formaldehyde can be manufactured from methanol via two different reaction routes:
 1. Dehydrogenation or oxidative dehydrogenation in the presence of Ag or Cu catalyst.
 2. Oxidation in the presence of Fe-containing MoO_3 catalyst.
 - (b) A functional group is a group of atoms within a molecule that has a characteristic chemical behavior. The chemistry of every organic molecule, regardless of size and complexity, is determined by the functional groups it contains.
 - (c) The structure of an organic molecule is usually determined using spectroscopic methods such as mass spectrometry and infrared spectroscopy. Mass spectrometry (MS) tells the molecular weight and formula of a molecule; infrared (IR) spectroscopy identifies the functional groups present in the molecule.
3. 政府近年來積極推動「兩兆雙星」計畫，所謂雙星，亦即「半導體」及「彩色顯示器」產業，其年產值都將突破新台幣一兆元，這將是台灣經濟發展重要里程碑，而這兩個產業將成為台灣產業最亮眼的兩顆「新星」。
4.
 - (a) 奈米材料(Nanomaterials)由於其結構的特殊性，表現出有別於傳統材料的特殊性質，奈米材料將成為未來科技的重要角色。
 - (b) 液晶顯示器(Liquid crystal displays; LCDs)比傳統的顯示器如陰極射線管(Cathode ray tubes; CRTs)更輕、更薄及更省電，因此已廣泛使用在許多電子產品中。