

科目：食品化學

系所組：食品科學系

1. pH is one of environmental factors influence the solubility of proteins. Please give a figure (pH-solubility profile) and explain how pH influences the solubility of proteins (13 points)?
2. Please give two examples of proteolytic enzyme for food applications (12 points)?
3. Crude oils are generally prepared from plant sources by pressing, solvent extraction, or a combination, and those products contain lots of non-lipid materials. Please describe major refining steps to produce edible oil products with desired color, flavor and shelf life (10 points).
4. What is the difference in antioxidative mechanisms between carotenoids and anthocyanins (5 points)? How pH values affect the stability of chlorophyll and anthocyanins (5 points)?
5. A low-salt bite-size ham product company claims the salt used is only 0.5% (w/w), however, this product has been detected sodium content greater than 1000 mg/100g. What source(s) do you think causing this problem (5 points)?
6. Calcium, phosphate, and sodium are three important minerals. What are the food sources and functional roles in foods of these minerals (15 points)?
7. Cyclodextrins are cyclic oligosaccharides comprised of (1→4)-linked α -D-glucopyranosyl units. How to produce cyclodextrins (5 points)? What are the food applications of cyclodextrins (5 points)?
8. A food protein associates with water at various stages of hydration and the associated water can be grouped into three zones in the moisture sorption isotherm (MSI). What is MSI (4 points)? What are three types of bound water (3 points)? What are the major difference between bound water and entrapped water (6 points)?
9. Explain the following terms (12 points):
 - (1) An o/w emulsion
 - (2) Coalescence of foams
 - (3) Respiratory pattern of fruits

※ 注意：1.考生須在「彌封答案卷」上作答。

2.本試題紙空白部份可當稿紙使用。

3.考生於作答時可否使用計算機、法典、字典或其他資料或工具，以簡章之規定為準。