

科目：

食品化學

系所組：

食品科學

1. How many types of antioxidative mechanisms are characterized (6 points)?
In the following three compounds: $\text{C}_6\text{H}_5\text{-CH}_3$, $\text{C}_6\text{H}_5\text{-C-CH}_2\text{OH}$, $\text{C}_6\text{H}_5\text{-OH}$, which one(s) may act as antioxidant (2 points)? How its mechanism serves to prevent lipid oxidation (5 points)?
2. How to preserve the anthocyanins in food products (10 points)
3. What are the basic taste sensations (5 points)? How human to sense sweet taste (5 points)
4. A globular protein naturally exists in an aqueous solution. It is inevitable for the globular protein to form interactions with water in foods. What are the two major interaction and bonds that may be formed between the native protein and water molecules (7 points)? Fully explain how you can prevent the protein food from the contamination of microorganism by lowering the water activity (6 points).
5. What are food gels? Explain how gluten in dough can form an elastic network (8 points).
6. Explain the following terms (12 points):
 - A) An o/w emulsion;
 - B) Bound water;
 - C) Chemical leavening systems.
7. What is the mechanism of acrylamide formation in foods? How to minimize the formation of acrylamide in foods? (8 points)
8. List and explain the structure of protein. (8 points)
9. List the lipid composition and corresponding weight percent of bovine milk. (6 points)
10. Explain the following terms (12 points):
 - A) Amylase
 - B) Protein denaturation
 - C) Carrageenan
 - D) Casein.

※ 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。