國立臺灣海洋大學一００學年度研究所碩士班暨碩士在職專班入學考試試題

考試科目： 食品化學與食品加工

系所名稱： 食品科學系碩士班食科組

1.答案以橫式由左至右書寫。2.請依題號順序作答。

1．請以文字說明何謂蛋白質變性？並敘述變性後蛋白質的以下特性有何變化。（１５％）
（１）Ａ２８０ｎｍ
（２）疏水性
（３）保水性
（４）蛋白質水解酵素活性
（５）乳化性
（６）鹽溶性
（７）光學活性
（８）蛋白質結晶特性
（９）分子不對稱性
（１０）蛋白胜肽鍵是展開或摺疊

2．在高溫烘培時，麵包表面會有梅納反應 (Maillard reaction)，請說明此種褐變需有何種成分物質存在才會進行？如何生成中間產物 α,β-dicarbonyl compounds?其化學結構式為何？最後經何種反應產生香氣(odor)？(１0%)

3．解釋名詞（每小題 5 分）：
(1) Peroxide value.
(2) Proanthocyanidin.
(3) Ascorbic acid oxidase.
(4) Phospholipase.
(5) Solid fat index.

4．Explain the following terms: (每小題 2 分)
a. Water activity
b. Food irradiation
c. Controlled atmospheric storage
d. Aseptic packaging

5．Surimi, tofu, hot dog, and cheese are made from fish, soybean, pork, and milk, respectively, by taking the advantages of “protein functional properties”. Explain in detail among their differences and similarities in terms of processing principles, key processing steps and parameters, quality attributes, preservation mechanisms, and key additives, if needed, to achieve their unique characteristics of these products. (12 分)

6 · As a "prospective food scientist" like you, how will you response when you are asked "are the food products safer now than before?" (5 分)

7 · Give the reason of noticed items during processing the minced fish meat products made from cultivated milkfish of South-Taiwan. (10 分)

8 · How to predict the heating time by way of Fo value when using 116oC to produce No.2 canned tuna in oil. (10 分)

9 · Has what similarities and differences of technique that was used in processing between soy sauce and miso from soybean? (5 分)