

# 國立嘉義大學九十三年學年度 食品科學系碩士班招生考試試題

## 科目：專業英文

### 一、 Translate the following terms into English. (24%)

- |         |          |          |
|---------|----------|----------|
| 1. 焗    | 2. 過熱蒸氣  | 3. 植物固醇  |
| 4. 雷諾數  | 5. 膜淤塞   | 6. 熱致死曲線 |
| 7. 流動床  | 8. 二次代謝物 | 9. 殺菌軟袋  |
| 10. 驅動力 | 11. 單重態氧 | 12. 滲透脫水 |

### 二、 Translate the following terms into Chinese. (26%)

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|-----------------------------------|--------------------------|
| 1. conservation of mass           | 2. bulk density          |
| 3. apparent viscosity             | 4. liposome              |
| 5. scraped surface heat exchanger | 6. counter current       |
| 7. ohmic heating                  | 8. submerged cultivation |
| 9. lye peeling                    | 10. yield stress         |
| 11. manothermosonication          | 12. hydrolytic rancidity |
| 13. wet-milling process.          |                          |

### 三、 Translate the following paragraphs into Chinese. (50%)

1. Common alternating electric current reverses its direction 60 times a second. Microwaves do the same, but at frequencies corresponding to 915 or 2450 MHz. Food and certain other materials contain molecules that act as dipoles, that is, they exhibit positive and negative charges at opposite ends of the molecule. Such molecules also are said to be polar. Water molecules are polar with the negative charge centered near the oxygen atom and the positive charge nearer the hydrogen atoms.

2. Yeast and baking powders are not the only effective leavening agents. Water in doughs or batters turns to steam in the oven and the expanding steam contributes to leavening. Air in a dough or a batter similarly expands when heated in the oven and contributes to leavening. In yeast-leavened or chemically leavened goods, although carbon dioxide from fermentation or from baking powder is the major leavening gas, it is supplemented with expanding steam and expanding air from oven heat.
3. The greater the temperature difference between the heating medium and the food, the greater will be the rate of heat transfer into the food; this provides the driving force for moisture removal. When the heating medium is air, temperature plays a second important role. As water is driven from the food as water vapor, it must be carried away or it will create a saturated atmosphere at the food's surface, which will slow down the rate of subsequent water removal.
4. Bacteria, yeasts, and molds are contained by cell membranes. These membranes allow water to pass in and out of the cells. Active microorganisms may contain in excess of 80% water. When bacteria, yeasts, or molds are placed in a heavy sugar syrup or salt brine, water in the cells moves out through the membrane and into the concentrated syrup or brine. This is the process of osmosis; in this case water moves from the cell containing 80% water into the syrup or brine which may contain only 40 or 30% water.
5. Unless these enzymes are inactivated by heat, chemicals, radiation, or some other means they continue to catalyze chemical reactions within foods. Some of these reactions are highly desirable if not allowed to go too far - like continued ripening of tomatoes after they are picked, and natural tenderizing of beef on ageing. But ripening and tenderizing beyond an optimum point becomes food deterioration.