

1. 說明何謂 "prebiotics" 並舉出兩種屬於此類之物質 (7%)
2. 說明 A_w 對食品中微生物抗熱性及儲存過程中存活之影響 (6%)
3. 何謂「食品安全指標微生物」？寫出做為此類微生物應具有之四個特點 (9%)
4. 分辨 fecal coliform 及 *Escherichia coli* 時常進行哪些試驗？其原理為何？(12%)
5. 乾酪發酵時造成牛乳發生凝結現象之主要原因為何 (6%)
6. 分別寫出肉品發生綠變(green meat)及因加熱處理不適當引其罐頭食品發生黑變之微生物名稱（學名）並說明發生此現象之原理 (10%)
7. List one species each from *Lactococcus*, *Leuconostoc*, *Pediococcus*, *Bifidobacterium*, and *Propionibacterium*, and its end products from the fermentation of glucose. (10%)
8. Describe the process for sauerkraut manufacture and the sequential growth of lactic acid bacteria during the natural fermentation of sauerkraut. (10%)
9. Describe the process for red grape wine manufacture and the growth of microbes during red wine fermentation. (10%)
10. What is lactose intolerance? Explain the possible mechanisms by which consumption of some fermented dairy products or probiotics can help overcome this problem. (10%)
11. Describe the principle of using a combination of intrinsic and extrinsic factors, or hurdle concept, in the preservation of foods. (10%)