1. 說明 Voges-Proskauer reaction 之原理(3%)，其於微生物之檢測上應用於何處。 (3%)
2. 以生乳置於室溫為例說明其中 Predominant flora 變化之情形及其原因。 (12%)
3. 「味噌」(Miso) 之釀造過程中有「製麴」之階段，何謂「製麴」？請說明其相關之微生物及作用。 (12%)
4. 除了可能引起食品之腐敗外 (a) *Aspergillus parasiticus*, (b) PA 3679 (c) *Saccharomyces cerevisiae*, (d) *Acetobacter aceti* 在食品微生物學上尚有何其他重要意義，並請註明其究屬細菌，酵母菌或黴菌。 (12%)
5. Nisin 是由哪種微生物所產生的 bacteriocin？(2%) 其於食品製備上有何用途？(2%)何謂 bacteriocin? (4%)
6. Define redox potential and discuss how it influences microbial growth in a food. How can microorganisms be grouped on the basis of their growth capabilities at different redox potentials and oxygen availabilities? (10%)
7. List and briefly explain the five major pathways microorganisms use to metabolize monosaccharides found in foods. (10%)
8. (1) Name three bacterial species that are now used as probiotic bacteria. (6%) (2) Name two species of molds and list their uses in food fermentation. (4%)
9. (1) List the important characteristics of beneficial bacteria present in the gastrointestinal (GI) tract. (2) List and briefly explain the factors that could adversely affect the presence of beneficial bacteria in the human GI tract. (10%)
10. (1) 請解釋: n, c, m, M. (4%) (2)說明下列有關某食品之 microbiological criteria 之意義 (6%)：Coliforms　n = 5, c = 1, m = 10, M = 100；*Salmonella* n = 15, c = 0, m = 0.

試題隨卷繳回