

Part A (50%)

1. Gas production and foam stability is very important in eating quality of bakery products. (10%)
 - (a) What are the gas sources for the making of breads, cakes and cookies?
 - (b) Why the bread and cookie dough and cake batter can hold gas during processing?
 - (c) Please give three ways to enhance the foam stability in the dough and batter during processing?
2. You are working with a twin-screw extruder. Your boss, who doesn't know as much about extrusion, asks you the following questions. Please answer them. (10%)
 - (a) What is an extruder?
 - (b) What are the major changes in your feed (protein and polysaccharide) as it goes through the extrusion process?
 - (c) Why moisture content of feed is important for the expansion property of extrudate?
3. Describe the wheat flour milling process and explain how the streams used in making various flours influence the characteristics of the resulting flours. (10 points)
4. Identify at least two specific additives that might be used for each of the following functions: antioxidants, preservatives, emulsifier, bulking agents and pH control. (10%)
5. If you have following food products what type of modified atmosphere packaging (MAP) will you choice for? Please give your reasons. (6 points)
 - (a) Potato chips
 - (b) Ground pork
 - (c) Quick cook oat flake
6. What starch product is best for use in starch-thickened products that are to be frozen? Explain why this starch is a good choice. (4%)

Part B (50%)

解釋或說明下列各項：5%，each

1. cold sterilization
2. hurdle technology
3. oil refining
4. cyclone separator
5. freezer burn
6. thermal death time
7. draw a cross section of a double seam (two- or three-piece cans)
8. Ostwald ripening
9. low acid foods
10. HACCP