

科目：語文能力-專業英文

系所組：食品科學系

I. Milk is a complex 26 and soluble mixture of water, lactose, fat, protein, minerals and vitamins. Due to its comprehensive nutritional value, milk has become an important healthy food. Fresh whole milk is a common type of milk in the market, but 27 milk is appreciated by low-fat diet consumers because of the prevalence of 28, hyperlipidaemia and cardiovascular diseases currently. Lactose is one of the main nutrients of milk and a unique 29 presented only in mammalian milk. As the origin of the sweetness of milk, lactose is an important indicator of many 30 products. However, high lactose content can cause lactose 31, whose main symptoms are bloating, flatulence, abdominal pain and diarrhoea. Therefore, determining the lactose 32 in raw milk is routinely carried out in food industry to guarantee effective process and to control product 33.

26. (A) colloidal (B) residue (C) compound (D) composition
27. (A) skim (B) organic (C) light (D) heavy
28. (A) cancer (B) asthma (C) headache (D) obesity
29. (A) protein (B) carbohydrate (C) mineral (D) vitamin
30. (A) soy (B) meat (C) dairy (D) fresh
31. (A) intolerance (B) reduction (C) loss (D) accumulation
32. (A) weight (B) volume (C) part (D) content
33. (A) value (B) quality (C) nutrition (D) composition

II. Coffee is a major commodity in the world economy, second only to petroleum. The most widely cultivated 34 are *Coffea arabica* (arabica) and *Coffea canephora* (robusta). Despite the poorer sensory quality of *C. canephora*, it has the advantage of allowing 35 of large amounts of soluble solids, which enables its use in blends and in the soluble coffee industry. Beverages prepared from roasted beans have 36 flavour and aroma in addition to their physiological effects. The preference for different kinds of coffee beverages is strictly 37 social habits and country cultures. The company GEA Niro (Parma, Italy), a traditional 38 of process lines for instant coffee and tea, reported that soluble coffee is widely 39 (45% in Eastern Europe, 53% in Asia/Pacific, and 79% in Australia), standing out in countries where tea is a traditional beverage. Soluble coffee 40 are a major source of revenue in Brazil due to the higher aggregate value of the product.

34. (A) types (B) species (C) kinds (D) styles
35. (A) removal (B) exclusion (C) extraction (D) injection
36. (A) pleasant (B) lovely (C) unsatisfying (D) many
37. (A) depended on (B) associated with (C) relied on (D) subjected to
38. (A) farmer (B) grower (C) manager (D) producer
39. (A) consumed (B) used (C) eaten (D) appeared
40. (A) imports (B) usages (C) packages (D) exports

※ 注意：1. 考生須在「彌封答案卷」上作答。

2. 本試題紙空白部份可當稿紙使用。

3. 考生於作答時可否使用計算機、法典、字典或其他資料或工具，以簡章之規定為準。

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III. The sous vide process is characterized by 41 packaging in heat-stable, high barrier 42 followed by pasteurization and quick cooling before refrigerated storage below 3°C. The packaging 43 must fulfil several tasks, and therefore meet several specifications: it must be resistant to high temperatures, and have low 44 to gases (O₂, vapour), sufficient 45 strength and limited migration of plastic constituents (food grade).

Sous vide cooked foods usually undergo very 46 heat treatments and some concern has been expressed about the microbiological 47 involved. One of the 48 of prime interest with regard to safety of sous vide cooked beef is *Listeria monocytogenes* due to its widespread occurrence, psychrotrophic nature and relatively high heat 49. Heating at slowly rising temperatures has been shown to enhance viability of *L. monocytogenes* in broth and in pork and 50 environments facilitate resuscitation of heat-injured cells of this bacterium. Therefore concern may arise about the possible survival of *L. monocytogenes* in marginally heated sous vide cooked meat products.

41. (A) aseptic (B) modified atmosphere (C) aluminum (D) vacuum
42. (A) bags (B) cans (C) boxes (D) bottles
43. (A) outside (B) material (C) content (D) label
44. (A) evaporation (B) space (C) storage (D) permeability
45. (A) mechanical (B) antibacterial (C) antioxidative (D) chemical
46. (A) high (B) low (C) gentle (D) harsh
47. (A) control (B) quality (C) risks (D) standards
48. (A) cells (B) organisms (C) types (D) fungi
49. (A) instability (B) intolerance (C) capacity (D) resistance
50. (A) anaerobic (B) aerobic (C) low humidity (D) low water activity

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科目：食品加工

系所組：食品科學

1. 由大豆原油粗製油製成烤酥油通常要經過 5 個步驟，請簡要說明每個步驟的原理和目的。(15%)
2. 市售一般奶粉和即溶奶粉的加工方法有何不同？請說明。(10%)
3. 冷凍食品提供了產品的保存性與飲食的快速方便性，對於其加工技術端，如何影響最終產品品質，請回答以下問題：
 - (1) 何謂最大冰晶生成帶？(5%)
 - (2) 何謂急速冷凍？與一般冷凍有何差別？請畫曲線說明。(5%)
 - (3) 何謂 IQF (individual quick freezing)？冷凍方式有哪些？(5%)
 - (4) 何謂 freezer burn？應如何防止？(5%)
 - (5) 何謂 drip loss？應如何避免？(5%)
4. 請針對蔬果、水產、肉品各舉一例食品說明其(1)加工流程、(2)加工過程中可能產生的副產物(by-products)與(3)這些副產物可能的再利用。(30%)
5. 請說明水活性與 pH 值如何影響食品的安定性。(10%)
6. 請解釋下列名詞
 - (1) 無菌加工(5%)
 - (2) 噴霧乾燥(5%)