

科目：專業英文

系所組：食品科學系

26. _____ refers to how close a particular measure is to the true or correct value.
(A) Sensitivity (B) Precision (C) Mean (D) Accuracy (E) Standard deviation
27. The small portions taken for analysis are referred to as _____.
(A) materials (B) samples (C) products (D) particles (E) wastes
28. Lipids are a group of substances that are soluble in ether, chloroform, or other _____ solvents but are sparingly soluble in water.
(A) viscous (B) pure (C) organic (D) high boiling point (E) polar
29. Lard is rendered from hogs and contains about 43 % _____ fatty acids.
(A) saturated (B) unsaturated (C) long-chain (D) short-chain (E) trans
30. When milk is made into cheese, casein and fat are concentrated, whereas the other milk components, especially water, are mainly removed along with the _____.
(A) cream (B) skim milk (C) buttermilk (D) whey (E) steam
31. _____ refers to killing of all living microorganisms, including spores, in the food product.
(A) Pasteurization (B) Blanching (C) Freezing (D) Drying (E) Sterilization
32. Casein is not a globular protein; it associates extensively and is present in milk in large aggregate, called casein _____.
(A) powder (B) emulsion (C) dispersion (D) fiber (E) micelle
33. A _____ is a device that separates particles from suspensions, or even macromolecules from solutions, according to their size, shape, and density.
(A) spray dryer (B) spectrometer (C) centrifuge (D) homogenizer (E) retort
34. Reducing sugars give own colors to baked goods when they combine with free amino acid groups of proteins in a browning reaction called the _____ reaction
(A) Maillard (B) chemical (C) reversible (D) enzymatic (E) redox
35. _____ is the red, blue-red, blue, or purple pigment in fruits and vegetables such as blueberries, cherries and raspberries.
(A) Chlorophyll (B) Betalain (C) Anthocyanin (D) Carotenoid (E) Curcumin
36. Stevia is a low-calorie, nature _____.
(A) fat replacer (B) sweetener (C) pigment (D) emulsifier (E) antioxidants
37. Soybean is a grain _____ and provides high-quality nutrition.
(A) cereal (B) oilseed (C) legume (D) nut (E) millet

※ 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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38. Rice bran is an important cereal industry _____, which is generated during the production of white rice.

(A) meal (B) material (C) nutrient (D) cake (E) by-product

39. Collagen is a structural _____ with branched chains which are found in the skin, blood vessel, ligament, cartilage, and bone of the animal.

(A) protein (B) polysaccharide (C) glycoprotein (D) lipid (E) peptide

40. Butter is generally made from cream by _____ and working.

(A) mixing (B) centrifugation (C) heating (D) churning (E) evaporation

Proteins and low molecular weight _____ (41) are the two major components included in foods as emulsifying agents. Protein is a _____ (42), linear polypeptide consisting of hydrophilic and hydrophobic _____ (43). The amphiphilic nature of protein, which is essential for _____ (44) agents, originates from the well-balanced distribution of the hydrophobic and hydrophilic regions in the protein molecule. The emulsifying activity of the protein is mainly based on this amphiphilic nature, and these components contribute to the process of emulsification and emulsion _____ (45) in different ways.

41. (A) surfactants (B) lipids (C) carbohydrates (D) peptides (E) sugar alcohol

42. (A) monomer (B) particle (C) micelle (D) macromolecular (E) fiber

43. (A) sugars (B) amino acids (C) fatty acids (D) organic acids (E) carbon chains

44. (A) bulking (B) coloring (C) seasoning (D) gelling (E) emulsifying

45. (A) stabilization (B) formation (C) size (D) shape (E) hardness

Lactic acid bacteria play an important role in the production of fermented dairy products. They ferment _____ (46) and produce _____ (47), which decreases the pH of milk. As a result, pH reaches the isoelectric point of casein, which is the major protein in milk. At the isoelectric point, the total numbers of positive and negative charges on the amino acids are in _____ (48). At that point, casein _____ (49) and coagulum are formed. This causes both physical and biochemical changes in the product. In addition to lactic acid, starter cultures may produce organic molecules, such as acetaldehyde, diacetyl, acetic acid, ethanol, exopolysaccharides, etc., which have effects on textural and _____ (50) profiles of the product. Therefore, different types of cultures and production conditions create different characteristics for specific products.

46. (A) fructose (B) glucose (C) lactose (D) maltose (E) xylose

47. (A) lactic acid (B) malic acid (C) acetic acid (D) tartaric acid (E) citric acid

48. (A) position (B) equilibrium (C) unbalanced (D) order (E) load

49. (A) separates (B) denatures (C) hydrolyzes (D) dissociates (E) precipitates

50. (A) color (B) flavor (C) nutritional (D) appearance (E) structure

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科目：食品加工

系所組：食品科學

1. 請解釋 Hysteresis of moisture sorption isotherm 的原因(10%)。
2. 氫化(hydrogenation)處理用以改變油脂的不飽和程度，但會造成反式脂肪酸生成，為何(5%)？請問如何避免此處理過程中產生反式脂肪酸(5%)？
3. 食品中膠體結構如何形成(10%)？
4. 請舉出三種可以延長食品保存期限的方法，並說明所列方法可以延長食品保存期限的原理及優缺點(15%)。
5. 請繪圖說明何謂恆率乾燥期(constant rate period)與減率乾燥期(falling rate period) (10%)。
6. 請解釋下列名詞
 - (1) 殺菁(blanching) (5%)
 - (2) 巴氏殺菌(Pasteurization) (5%)
 - (3) 對數減菌時間(decimal reduction time, D value) (5%)
7. 啤酒發酵的原理為何？並請列出啤酒花的三種功能(10%)。
8. 乳品發酵菌元有何特性？並請列出三種不同菌元(10%)。
9. 冷凍魚貝類常用包冰技術進行保存，請說明包冰原理與做法(10%)。

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