

科目：專業英文

系所組：食品科學系

- (26) The enzyme _____ can act on α -1,4 glycosidic linkages from the non-reducing end, and on damaged amylose or amylopectin chains.
(A) lactase (B) β -amylase (C) α -amylase (D) pectinase
- (27) _____ is the major method of heat transfer from molecule to molecule through a solid.
(A) Radiation (B) Convection (C) Conduction (D) Irradiation
- (28) Low-methoxyl pectin can form cross-links with _____.
(A) calcium (B) acid (C) glucose (D) sodium
- (29) IMViC test does not include _____ test.
(A) malic acid (B) Voges-Proskauer (C) methyl red (D) indole
- (30) The _____ is defined as the time required for a 90% reduction in the microbial population.
(A) Z value (B) D value (C) F value (D) T value
- (31) The _____ is the first major phase in a batch fermentation process, denoting the time taken by the cells to adapt to the new environment.
(A) log phase (B) lag phase (C) death phase (D) stationary phase
- (32) Sucrose is a disaccharide consisting of the monosaccharides _____ and glucose.
(A) galactose (B) mannose (C) fructose (D) glucose
- (33) Tempeh is a _____ based fermentation product that contains over 40% protein.
(A) rice (B) soybean (C) corn (D) barley
- (34) _____ chromatography is based on electrostatic interactions between solute and stationary phase.
(A) Ion-exchange (B) Gas (C) Thin-layer (D) Size-exclusion
- (35) Safety of cereal grains is better assured by appropriate storage including _____ rotation.
(A) LIFO (B) FIFO (C) random (D) FILO
- (36) _____ is the least sweet and least soluble of the sugars.
(A) Xylose (B) Lactose (C) Sucrose (D) Glucose
- (37) _____ detector can be used to measure the absorption of radiation by chromophore-containing compounds.
(A) Fluorescence (B) UV-Vis absorption (C) Refractive Index (D) Electrochemical
- (38) ELISA stands for Enzyme-Linked _____ Assay.
(A) Inhibition (B) Induction (C) Immunosorbent (D) Immobilization

※ 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。

科目：專業英文

系所組：食品科學系

- (39) Dry ashing refers to the use of a muffle furnace capable of maintaining temperatures of _____ °C.
(A) 50 – 60 (B) 500 – 600 (C) 90 – 100 (D) 2000
- (40) _____ is a process where a liquid is dispersed into droplets in a gas.
(A) Atomization (B) Crystallization (C) Emulsification (D) Filtration
- (41) HACCP stands for Hazard Analysis and Critical _____ Point.
(A) Conversion (B) Control (C) Continuous (D) Connection
- (42) _____ is the most abundant protein found in mammals.
(A) Casein (B) Collagen (C) Ovoglobulin (D) Ovalbumin
- (43) _____ should not be consumed by those with the genetic disease phenylketonuria (PKU) because the phenylalanine cannot be metabolized.
(A) Cyclamate (B) Saccharin (C) Sucralose (D) Aspartame
- (44) Phospholipids are similar to triglycerides but contain only ___ fatty acids esterified to glycerol.
(A) zero (B) one (C) two (D) three
- (45) The lactic acid bacteria produce lactic acid principally as the end product of _____ fermentation.
(A) sugar (B) fat (C) protein (D) polyphenol
- (46) Blanching is used to _____ enzymatic activity in vegetables and some fruits before further processing.
(A) facilitate (B) maintain (C) destroy (D) generate
- (47) Water has strong _____ bonds to hold the two hydrogen atoms and one oxygen atom together.
(A) hydrogen (B) covalent (C) ionic (D) metallic
- (48) _____ fermentation is carried out in a stirred tank reactor with an initial amount of medium; during fermentation, no medium addition or removal occurs.
(A) Batch (B) Fed-batch (C) Continuous (D) Immobilized cell
- (49) _____ processing involves the application of high-voltage pulses to foods located between a series of electrode pairs.
(A) SVP (B) PEF (C) MW (D) HHP
- (50) _____ refers to the occurrence where starch reverts to a more crystalline structure upon cooling.
(A) Gelatinization (B) Gelation (C) Retrogradation (D) Syneresis

※ 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。

科目：食品加工

系所組：食品科學

1. 油脂加工中有三個步驟可進行工業交酯化(interesterification)，請簡要說明。(9%)
2. 請解釋下列乳品加工相關名詞：(9%)
 - (1) 攪動(churning)
 - (2) 牛奶標準化(milk standardization)
 - (3) 二段式均質(two-stage homogenization)
3. 天然與人工進行肉品嫩化(tenderizing)之差異為何？並請解釋肉品嫩化的機制。(7%)
4. 請說明水產原料容易腐敗的原因。(5%)
5. 請說明以下兩種水產加工品(1)冷燻鮭魚與(2)蟹風味棒的製造流程及其保存方法與原理。(15%)
6. 香腸製品中添加亞硝酸鈉的目的為何？(5%)
7. 請就操作溫度(例： $>100^{\circ}\text{C}$ 、 $<100^{\circ}\text{C}$)、操作壓力(例：常壓、減壓)、適用食品型態(例：固體、液體、固液體皆可)、貯存期限(例：數日、數週、數月)、主要目的(例：去除致病菌、去除腐敗菌、去除酵素活性)等五個面向進行以下五種熱加工方法的比較，並各舉一個食品例子。(30%)
 - (1) 殺菁(blanching)
 - (2) 巴氏殺菌(pasteurization)
 - (3) 商業殺菌(commercial sterilization)
 - (4) 超高溫(ultra-high-temperature)殺菌
 - (5) 高溫短時間(high temperature short time)殺菌
8. 請說明輻射照射(irradiation)於食品加工之應用。(10%)
9. 請解釋下列名詞：(10%)
 - (1) 硫化黑變(sulfide blackening)
 - (2) 冷凍曲線(freezing curve)