

國立臺灣海洋大學 101 學年度研究所碩士班暨碩士在職專班入學考試試題

考試科目：科技英文

系所名稱：食品科學系碩士班食工組

1. 答案以橫式由左至右書寫。2. 請依題號順序作答。

1. (30%) 字彙: 請依序解釋下列劃底線單字(或名詞)

The most common¹ processes found in a food processing plant are heating and cooling of foods. In the modern industrialized food industry², we commonly find unit operations such as refrigeration³, freezing, thermal sterilization⁴, drying and evaporation⁵. These unit operations involve the transfer of heat between a product and some heating or cooling medium⁶. Heating and cooling of food products is necessary to prevent⁷ microbial⁸ and enzymatic⁹ degradation¹⁰. In addition, desired sensorial properties - color, flavor, texture - are imparted to foods when they are heated or cooled.

2. (20%) 翻譯: 請將下列文章整段翻譯成中文(勿逐字翻譯)

High pressure processing inactivates microorganisms that cause spoilage, naturally preserving the freshness of packaged foods. In most cases, the shelf life of the product can at least be doubled.

3. (30%)問答: 請根據文意，回答相對應問題

The formation of a biofilm occurs in five stages. In the first stage, bacterial cells use van der Waals forces to attach to a surface. In stage 1, cell attachment is still reversible, but in stage 2 the cells affix themselves more securely by forming exopolymeric material, which is a stronger adhesive compound. In stage 3, micro-colonies begin to form, and the biofilm begins to mature. Stage 4 involves more maturation, and the biofilm becomes a three-dimensional structure containing cells packed in clusters with channels running between them. And lastly, in stage 5 the biofilm disperses cells so that they can move on to initiate the formation of new biofilms. It is important to note that cell division is uncommon in mature biofilms. In the mature state, biofilm cells use energy predominantly to produce exopolysaccharides, which the cells use as nutrients.

- (a) 在第幾階段細胞可以脫離附著表面?
(b) 細胞分裂繁殖主要發生在哪些階段?
(c) 細胞附著在表面上以哪一種方式較為牢固?

4. (20%)中翻英:請以英文表達下列意思

- (a)冷媒流量在此時與消耗功率無關
(b)溫度越高殘餘水分含量越低