

1. (21%) Match the characteristics of eukaryotic cells in column A with their functions in column B.

Column A	Column B
_____ Pericentriolar material	1 Digestive enzyme storage
_____ Chloroplasts	2 Oxidation of fatty acids
_____ Golgi complex	3 Microtubule formation
_____ Lysosomes	4 Photosynthesis
_____ Mitochondria	5 Protein synthesis
_____ Peroxisomes	6 Respiration
_____ Rough endoplasmic reticulum (ER)	7 Secretion

2. (14%) Which of the following can be used to sterilize a heat-labile solution stored in a plastic container? (請選出正確答案，並說明原因)
- Gamma radiation
 - Ethylene oxide
 - Nonionizing radiation
 - Autoclaving
 - Short-wavelength radiation
3. (35%) (a) Describe most probable number (MPN) method. (10%) (b) Describe polymerase chain reaction (PCR). (10%) (c) Describe MPN-PCR method and its application. (15%)
4. (30%) (a) 測量微生物生長的方法有那些?(10%)(b) 而在環工各方面如何應用?請就您所知說明並解釋使用該方法之原因。(20%)