

大同大學 100 學年度研究所碩士班入學考試試題

考試科目：生物化學

所別：生物工程研究所

第1/1頁

註：本次考試 不可以參考自己的書籍及筆記； 不可以使用字典； 不可以使用計算器。
(每題10分)

1. Please predict the dominant charges of the following amino acids at pH 7: glutamic acid, glutamine, threonine, histidine, and arginine.
2. What is the ubiquitination? Please describe the functions of ubiquitination and its process.
3. How do the insulin and glucagons regulate the glucose metabolism in hepatocyte?
4. Please describe briefly the catabolism pathway for the odd-carbon fatty acids.
5. Suggest a reason why the cell membranes of bacteria grown at 20°C tend to have a higher proportion of unsaturated fatty acids than the membranes of bacteria of the same species grown at 37°C.
What are the effects of cholesterol present in the cell membranes of animal cells for membrane fluidity?
6. 請說明glycolysis、tricarboxylic acid cycle、及electron transport system在葡萄糖代謝所扮演之角色。
7. 何謂競爭型(competitive)、不競爭型(noncompetitive)、及非競爭型(uncompetitive)酵素抑制劑，對 K_m 及 V_{max} 有何影響？
8. 何謂弱化學作用力(weak chemical forces)?在生物大分子中弱化學作用力有何貢獻？
9. 生物細胞膜有何特徵？
10. 何謂南方氏雜交(Southern hybridization)?此實驗如何進行？