

簡答下列問題，每題十分，所有考題務必在答案卷上作答。

1. Describe the types of noncovalent interactions that are important in providing stability to the structure of macromolecules.
2. Is it possible that a polypeptide have only one free amino group and one free carboxyl group? Provide an explanation for your answer.
3. Explain why K_m is increased but V_{max} remains unchanged in typical competitive inhibition.
4. In each following pairs, select the fatty acid which has the higher melting temperature.
 - (a) 16:0, 16:1
 - (b) 18:1, 18:2
 - (c) 18:3, 20:4
5. AcetylCoA is a very important intermediate that initiate the Krebs Cycle, describe the possible sources for the generation of acetylCoA.
6. For each two-carbon increase in the length of a saturated fatty acid chain, how many additional moles of ATP can be formed when it is completely oxidized to CO_2 and H_2O ?
7. What is respiratory control in mitochondria? What is its function?
8. Describe the pathway by which cholesterol is uptaken.
9. Describe classes of hormones and explain their general mode of action.
10. Why must the DNA polymerase used in the polymerase chain reaction (PCR) be heat stable?