

國立中山大學 102 學年度碩士暨碩士專班招生考試試題

科目名稱：生物化學【生醫所碩士班】

題號：427001

※本科目依簡章規定「不可以」使用計算機

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請注意：考生請勿在試題紙上作答

一、問答題 Simple questions : (80%)

Q1: What are the cellular functions of cytoplasmic filaments? Please list three general types of cytoplasmic filaments. (10%)

Q2: In enzymology, what is V_{max} ? What is K_m ? What is the importance of V_{max} and K_m in enzyme kinetics? Please describe the relationship between K_m and V_{max} of a given enzyme. (10%)

Q3: What are the functions of ApoE in lipoprotein metabolism? Please compare the differences of chylomicron and VLDL. (10%)

Q4: Please describe the cellular and physiological functions of cholesterol. (10%)

Q5: Please describe the biochemical processes glycolysis and gluconeogenesis. Gluconeogenesis and glycolysis are reciprocally regulated. Please explain what this means and list the regulating molecules. (10%)

Q6: What is the tricarboxylic acid cycle (TCA cycle)? How is the TCA cycle regulated, which are the key enzymes? (10%)

Q7: Please describe the structure of a tRNA molecule. What parts of the tRNAs interact with the 30S subunit of ribosome and with the 50S subunit of ribosome? (10%)

Q8: Please describe the difference between the beta oxidation and fatty acid synthesis. (10%)

二、名詞解釋：Please define the following terms : (20%)

1. Chaperone (4%)
2. RNA editing (4%)
3. Ketone bodies (4%)
4. Histone code (4%)
5. Synthetic lethality (4%)

