

國立中山大學九十學年度博士班招生考試試題

科目：生物科學【生科所】

共 頁 第 頁

※任選四題作答，每題25分。答案超過四題者，以最低分之四題計算總分。

1. How protein and fats are digested and absorbed in our body?
2. List mechanisms that control and regulate the transport of materials across the cell membrane?
3. Describe pathways by which renin- angiotensin- aldosterone system evolved in the regulation of blood volume and blood pressure following severe dehydration.
How hypothalamus can be described as a major neuroendocrine organ?
4. Describes reproductive barriers (or isolation mechanisms) between species.
5. Compare exponential and logistic population growth. Under what conditions might each occur? What might limit growth?
6. Explain how the following factors change from the source of a river to its mouth: nutrient content, sediment, temperature, oxygen content, and food source.
7. Why is AIDS such a devastating and deadly disease?
8. Two papers published in this year's Nature Genetics claimed that the total estimated human genes are between 30,000 and 34,000. This is different from originally thought of 80,000 – 100,000 human genes. If the recent finding was true, what implications would present regarding expression and control mechanisms of human genes?
9. Discuss gene expression of eukaryotes in detail.