

中國文化大學 99 學年度轉學招生考試

生命科學系三年級

日期節次：7 月 27 日 第 3 節 13:30-14:50

科目：普通生物學 (125-29)

一、填空题，請寫英文，中文不計分（每 1 題 2 分；共 20 分）：

- ◆ 細胞呼吸過程中，在細胞質內將葡萄糖分解成丙酮酸的過程：\_\_\_\_\_ (1)。
- ◆ 解釋細胞膜是半流體狀態的模型稱為：\_\_\_\_\_ (2)。
- ◆ 代謝過程中，將大分子分解成小分子的過程，稱為 \_\_\_\_\_ (3)，將小分子合成大分子的過程稱為：\_\_\_\_\_ (4)。
- ◆ Meiosis 和 mitosis 最大的不同是前者的同源染色體配對，稱為 \_\_\_\_\_ (5) 和同源染色體間的物質交換，稱為 \_\_\_\_\_ (6)。
- ◆ 細胞有絲分裂的過程中，染色體位在分裂細胞的中央排成列，並與紡錘絲連結的時期，稱為： \_\_\_\_\_ (7)
- ◆ 減數分裂過程中，同源染色體配對的過程稱為： \_\_\_\_\_ (8)。
- ◆ A gene located on either sex chromosomes is called a \_\_\_\_\_ (9)。
- ◆ During the DNA replication, the DNA segments of the lagging strand are called \_\_\_\_\_ (10)。

填空题(20%) 以下每格 1 分

1. The negative f \_\_\_\_\_ effect of thyroid secretion can control the amounts of t \_\_\_\_\_ secretion ; the automatic nerve system be excites , produces the a \_\_\_\_\_ action for the organ active .
2. The pH value of blood about \_\_\_\_\_ , the maintain pH vale buffers include carbonate - b \_\_\_\_\_ system .

3. The N-waste of animal include (1). a \_\_\_\_\_ of fish , (2). urea of human  
And (3) u \_\_\_\_\_ of insects.
4. The most famous phylum of parasites is Phylum P \_\_\_\_\_ ,  
Include Chinese liver fluke.
5. Gastrpoda always use the r \_\_\_\_\_ as their tooth to grabs the foods , when  
they growth , the organ system will t \_\_\_\_\_ , then the opening of anus  
turn to mouth side. Their shell will c \_\_\_\_\_ , the most are right  
plane.
6. The blood sugar concents of human is \_\_\_\_\_ mg/100ml , When the  
hormone I \_\_\_\_\_ secrets , the blood sugar change to glycogen , store  
in livers , blood sugar lowers. When it too lower , the hormone  
g \_\_\_\_\_ secrets , the blood sugar will increase .
7. The respiratory control by blood \_\_\_\_\_ concentration. When this gas  
increases, blood \_\_\_\_\_ value will decrease , excite the respiratory  
center produces the respiratory motion .
8. In mammals kindey , the glomerulus produces the f \_\_\_\_\_ function .  
In tubules , the r \_\_\_\_\_ could pick up many H<sub>2</sub>O , nutrients and ions ,  
Through the surrounding capiliary to blood vessels.
9. The books about evolution wroted by Darwin in 1858 is :  
On the o \_\_\_\_\_ by means of n \_\_\_\_\_ .

第 / 頁共 3 頁

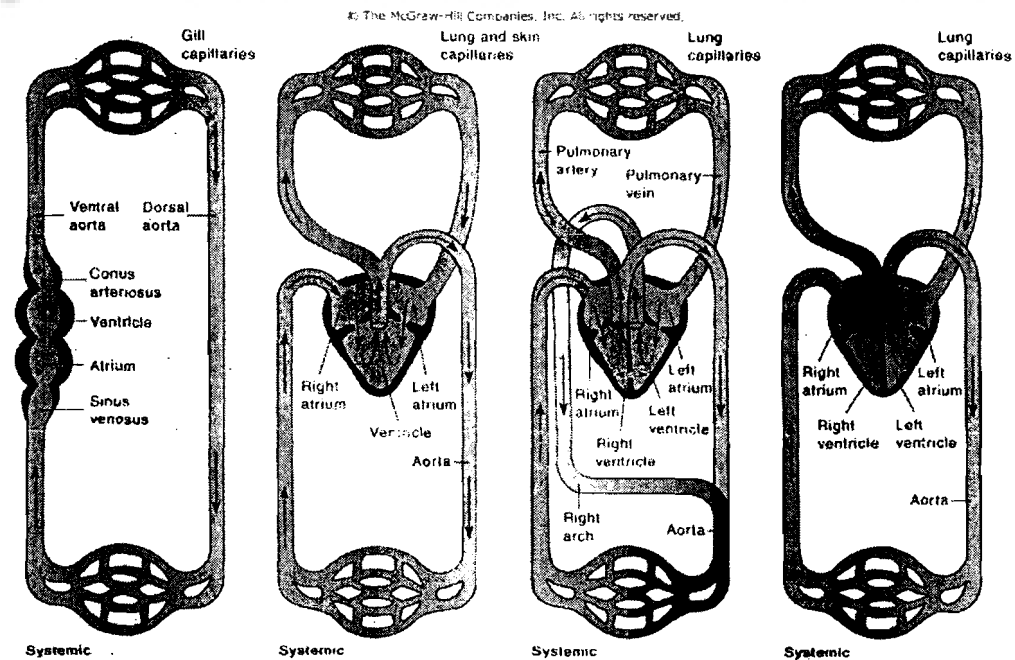
本 試 題 採  
雙 面 印 刷

二、解釋名詞 (30%)

1. Active transport and passive transport (3%)
2. Carvin cycle (3%)
3. splicesome (3%)
4. C3 plant and C4 plant (3%)
5. Mitosis and meiosis (3%)
6. countercurrent mechnism (5%)
7. Hemoglobin (5%)
8. Homology (5%)

三、問答題 25%

1. 試述脊椎動物門的心臟演化過程。(8%)



Systemic  
capillaries

Oxy-  
capillaries

Oxy-  
capillaries

Oxy-  
capillaries

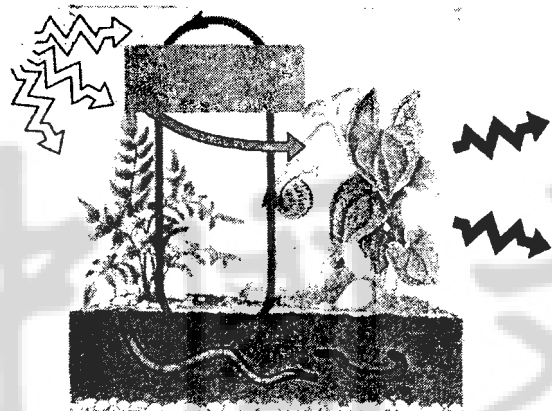
(a) Bony fishes

(b) Amphibians

(c) Most reptiles

(d) Crocodylians, birds,  
and mammals

2. 請參考下圖說明生物之能量變化，  
及食物鏈之關係。(7%)



第 2 頁 共 3 頁

本 試 題 採  
雙 面 印 刷

3. 請敘述組成內膜系統的胞器及其功能?(5分)
4. 請敘述循環性磷酸化及非循環性磷酸化的過程。(5分)

四、請翻譯下列文章(5 分)：

DNA Replication begins at special sites called origins of replication, where the two DNA strands are separated, opening up a replication “bubble”. At the end of each replication bubble is a replication fork, a Y-shaped region where new DNA strands are elongating. Helicase are enzymes that untwist the double helix at the replication forks. Single-strand binding protein binds to and stabilizes single-stranded DNA until it can be used as a template. Topoisomerase corrects “overwinding” ahead of replication forks by breaking, swiveling, and rejoining DNA strands.

中國文化大學

---

---

---

---

---

---

---

---

---

---