

1. What is the probability of heterozygous offspring?

雜合子後代的概率是多少？

	B	b
B	BB	Bb
b	Bb	bb

- A. 25%
- B. 50%
- C. 0%
- D. 100%

2. What allele combination should go in the missing box?

什麼等位基因組合應該放在缺失的框子裡？

	A	a
A	AA	Aa
a	??	aa

- A. AA
- B. Aa
- C. aa
- D. none of these (這些都不是)

3. Georgette wants to breed her pet phoenixes, but she isn't sure if the babies will burst into blue flames or red flames. Her documents show that her female phoenix is homozygous dominant for red flames, while her male phoenix is homozygous recessive for blue flames. What color flames will the babies have?

喬吉特想要培育她的寵物鳳凰，但她不確定這些鳳凰嬰兒會迸發出藍色火焰還是紅色火焰。她的文件顯示，她的雌性鳳凰是紅色火焰的顯性純合子，而她的雄性鳳凰

是藍色火焰的隱性純合子。問嬰兒會有什麼顏色的火焰？



- A. Red 紅色
- B. Blue 藍色
- C. Purple 紫色
- D. 50% Red, 50% Blue 50% 紅色，50% 藍色

4. AUG is the genetic code which is known as "START". It has an amino acid name as _____.

AUG 是被稱為“START”的遺傳密碼。它的氨基酸名稱為_____。

- A. Alanine 丙氨酸
- B. Methionine 蛋氨酸
- C. Selenocysteine 硒半胱氨酸
- D. Tryptophan 色氨酸

5. What is the process involve in converting RNA to protein?

將 RNA 轉化為蛋白質的過程是什麼？

- A. Duplication 重複
- B. Replication 複製
- C. Transcription 轉錄
- D. Translation 轉譯

6. Which gas is removed from the atmosphere during photosynthesis?

在光合作用過程中從大氣中去除了哪些氣體？

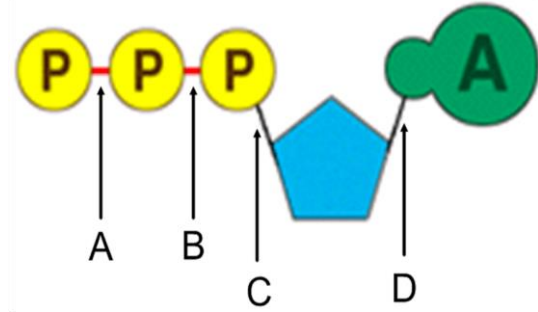
- A. hydrogen 氫氣
- B. oxygen 氧氣

C.nitrogen 氮氣

D.carbon dioxide 二氧化碳

7. Which bond of the ATP molecule is broken in order to release energy?

ATP 分子的哪個鍵斷裂以釋放能量？



A.A

B.B

C.C

D.D

8. At midnight, what is happening in the leaf of a plant?

午夜時分，植物的葉子發生了什麼？

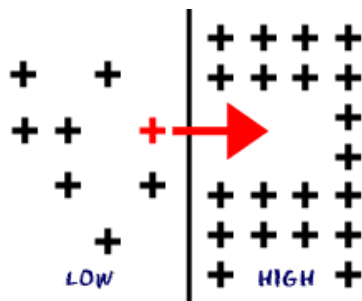
A.Respiration 呼吸作用

B.Photosynthesis 光合作用

C.Photosynthesis and respiration 光合作用和呼吸作用

D.None of the above 以上都不是

9. The movement of molecules from low to high is known as
分子從低到高的運動被稱為



A.simple diffusion 簡單擴散

B.facilitated diffusion 促進擴散

C.active transport 主動運輸

D.osmosis 滲透

10. The _____ stores food, water, wastes, and other materials in both plant and animal cells.

_____ 將食物、水、廢物和其他材料儲存在植物和動物細胞中。



A.Vacuole 液泡

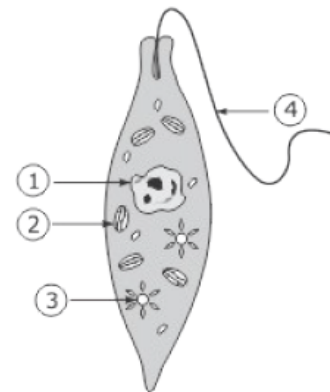
B.Mitochondria 線粒體

C.Ribosomes 核糖體

D.Chromatin 染色質

11. What structure does this organism use for locomotion (movement)?

該生物體使用什麼結構進行移行（運動）



A.1, nucleus 細胞核

B.2, chloroplast 葉綠體

C.3, vacuole 液泡

D.4, flagella 鞭毛

12. Cell organelles that are responsible for digesting food, worn out organelles and other cellular wastes are called _____.

負責消化食物、破舊的細胞器和其他細胞廢物的細胞器稱為_____。

- A.Mitochondria 線粒體
- B.Vacuoles 液泡
- C.Lysosomes 溶酶體
- D.Chloroplasts 葉綠體

13. The burning fossil fuels has harmed the environment by

燃燒的化石燃料已經通過以下方式危害了環境

- A.decreasing acid rain in the northeast United States 美國東北部酸雨減少
- B.adding carbon dioxide to the atmosphere 向大氣中排放二氧化碳
- C.increasing biodiversity in the lakes and ponds of the Adirondacks 增加阿迪朗達克湖泊和池塘的生物多樣性
- D.depleting the ozone shield directly over western New York State 耗盡紐約州西部上空的臭氧層

14. What would most likely happen if the rabbit population was removed from the food chain grass → rabbit → fox? 如果將兔子種群從食物鏈中移除，最有可能會發生什麼 草 → 兔子 → 狐狸？

- A.they would be more grass 他們會有更多的草
- B.there would be less rabbits 兔子會少
- C.there would be more fox 會有更多的狐狸
- D. None of them 全部都不是

15. In the wild, some alligators get their teeth cleaned by birds. The birds get their food from the alligators' teeth.

What type of symbiosis is this? 在野外，一些短吻鱷被鳥類清潔牙齒。鳥類從鱷魚的牙齒中獲取食物。

這是什麼類型的共生關係？



- A.Mutualism 互利共生
- B.Commensalism 共生主義
- C.Parasitism 寄生
- D.Neutralism 中立主義

16. In an ecosystem, there are populations of moose, rabbits, grass, and pine trees. Suddenly, a fire blazes through the area, which kills all of the populations. As the months go on, new species of grass begin to take root. This attracts animals, and eventually the ecosystem is restored.

What type of ecological succession happened?

在生態系統中，有駝鹿、兔子、草和松樹的種群。突然，一場大火燒遍了該地區，殺死了所有人口。隨著時間的流逝，新的草種開始生根發芽。這吸引了動物，最終生態系統得以恢復。

發生了什麼類型的生態演替？

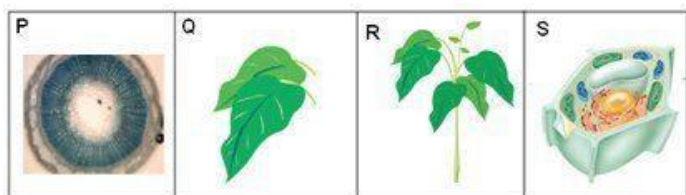


- A. Primary succession 主要繼承
 B. Secondary succession 二次繼承
 C. Tertiary succession 第三級繼承
 D. None of the above 以上都不是

17. Below are the % similarities of DNA between whales and other species. Based on this, which are whales **most** closely related to? 以下是鯨魚與其他物種之間 DNA 的相似度百分比。基於此，鯨魚與哪些關係最密切？

- A. 豬 Pig, 68.4%
 B. 河馬 Hippo, 83.4%
 C. 小鼠 Mouse, 38.4%
 D. 馬 Horse 78.2 %

18. Which answer choice **CORRECTLY** describes each picture of the levels of organization of this green plant? 哪個答案選項正確地描述了這種綠色植物組織水準的每張圖片？



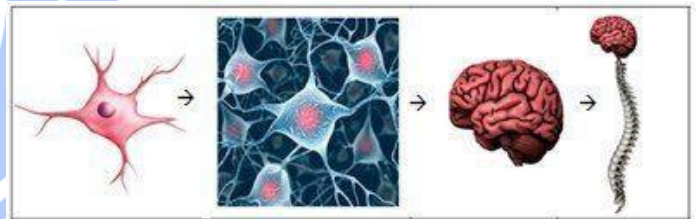
- A. P: tissue, Q: organ, R: organ system, S: cell
 P : 組織 , Q : 器官 , R : 器官系統 , S : 細胞

B. P: organ system, Q: cell, R: organ, S: tissue
 P : 器官系統 , Q : 細胞 , R : 器官 , S : 組織

C. P: organ, Q: tissue, R: organ system, S: cell
 P : 器官 , Q : 組織 , R : 器官系統 , S : 細胞

D. P: cell, Q: organ, R: organ system, S: tissue
 P : 細胞 , Q : 器官 , R : 器官系統 , S : 組織

19. The chart shows four levels of organisms. Which statement correctly describes a level of organization in the human nervous system 圖表顯示了四個層次的生物。哪個陳述正確描述了人類神經系統中的組織水準



- A. Nerve cells group to form nerve tissue. 神經細胞群形成神經組織。
 B. The brain is a group of nervous systems. 大腦是一組神經系統。
 C. The organs of the nervous system form a nerve cell. 神經系統的器官形成神經細胞。
 D. The nervous system has two groups of nerve tissues. 神經系統有兩組神經組織。

20. Which is **NOT** a possible way to reduce global warming? 哪種方法不是減少全球變暖的可能方法？

- A. Reducing top speeds limits for cars and trucks 降低轎車和卡車的最高速度限制

B. Insulating homes in countries in cold climates 寒冷氣候國家的房屋隔熱

C. Decreasing the number of nuclear power stations 減少核電站數量

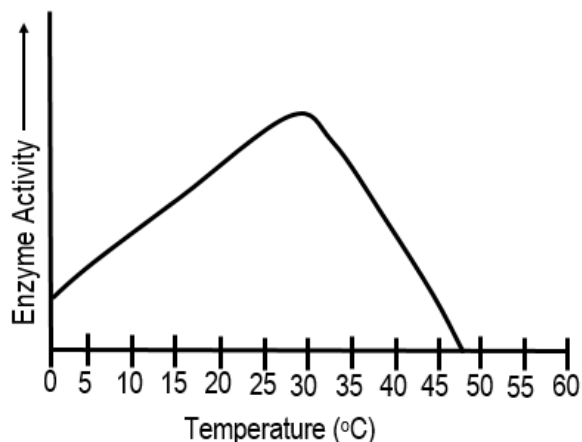
D. Improving traffic flow in cities 改善城市交通流量

21. Each one of the boxes on the Punnett Square represents what probability of an offspring's genotype in percentage(%)? Write answer just in number. 龐內特方塊上的每個方框都代表後代基因型的百分比概率(%)? 只寫數位答案。



Answer (in number):
答案 (數字) : _____

22. Based on the graph, what temperature does this enzyme work best? 根據圖表，這種酶在什麼溫度下效果最好?

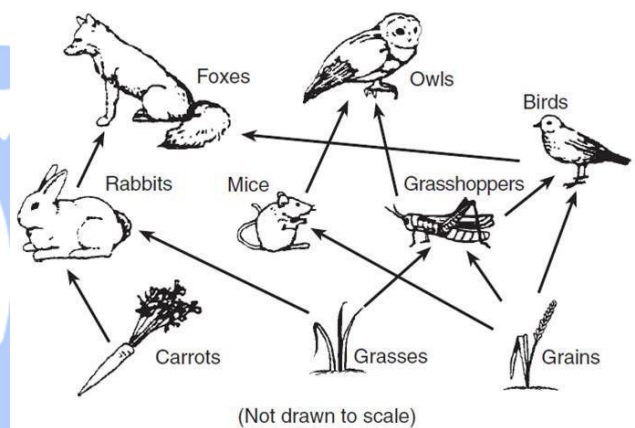


Answer (in number):
答案 (數字)

23. In a DNA molecule, if 38% of the molecular bases are C (cytosine), what percent of the bases are T (thymine)? Write answer in number 在 DNA 分子中，如果 38% 的分子鹼基是 C (胞嘧啶)，那麼 T (胸腺嘧啶) 的鹼基百分比是多少? 用數字寫答案

Answer (in number):
答案 (數字)

24. How many trophic levels are there? 有多少個營養級?



Answer (in number):
答案 (數字)

25. A brown eyed man of genotype Bb marries a blue eyed woman. What is the chance that their third child is brown eyed in percentage? Write answer in number 基因型 Bb 的棕色眼睛男人娶了一個藍眼睛的女人。他們的第三個孩子是棕色眼睛的百分比是多少? 用數位寫答案

Answer (in number):
答案 (數字)