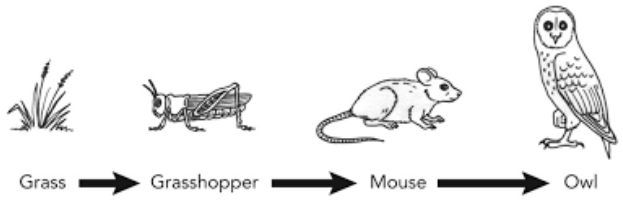
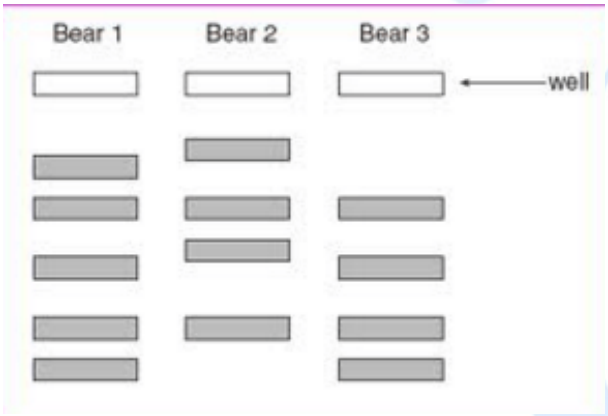
1.Who is the producer in this food chain?
在這條食物鏈中，誰是生產者？



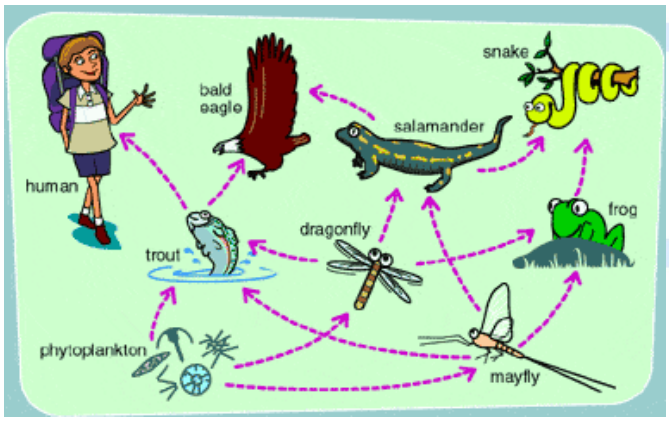
A.Grass 草　　B.Grasshopper 蚱蜢
C.Mouse 老鼠　　D.Owl 貓頭鷹

2.Which two bear species are most closely related?
哪兩種熊的親緣關係最接近？



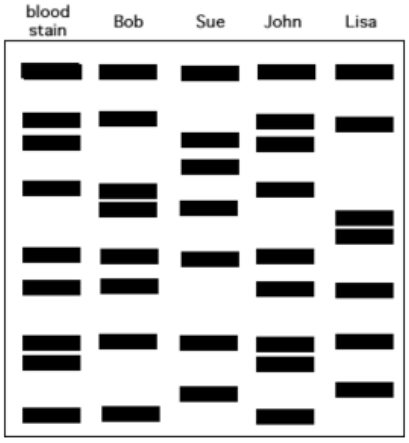
A.Bear 1 and Bear 2 熊 1 和 熊 2
B.Bear 1 and Bear 3 熊 1 和 熊 3
C.Bear 2 and Bear 3 熊 2 和 熊 3
D.There's no way to tell 無法判定

3.Use the diagram to answer the question. The Mayfly is a food source for which 3 organisms? 根據圖示回答問題：五月蠅 (Mayfly) 是哪三種生物的食物來源？



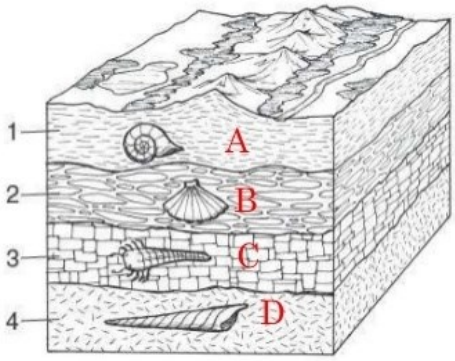
A.Frog, Dragon Fly and snake 青蛙、蜻蜓和蛇
B.Frog, trout and dragon fly 青蛙、鱒魚和蜻蜓
C.Frog, salamander and trout 青蛙、蠑螈和鱒魚
D.Frog and phytoplankton 青蛙和浮游植物

4.Based on these results whose blood was found in the blood stain at the crime scene? 根據這些結果，犯罪現場血跡屬於誰？



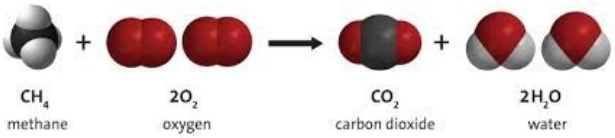
A.Bob　　B.Sue　　C.John　　D.Lisa

5.The diagram shows fossils in different rock layers. Which of these statements about the age of these fossils is most likely correct? 圖中顯示不同岩層中的化石，以下關於這些化石年齡的說法，哪個最有可能正確？



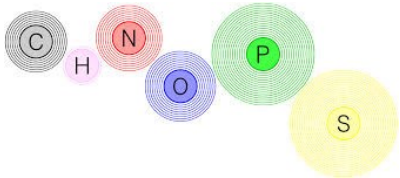
A.Fossil A and C are the same age
化石 A 和 C 年齡相同
B.Fossil B is older than fossil C
化石 B 比化石 C 更古老
C.Fossils A is older than fossil B
化石 A 比化石 B 更古老
D.Fossil D is older than fossil C
化石 D 比化石 C 更古老

6.What chemical reaction is this?
這是哪種化學反應？



A.Combustion 燃燒反應
B.Condensation Polymerization 縮合聚合反應
C.Addition Polymerization 加成聚合反應
D.Photosynthesis 光合作用

7.Mia, Olivia, and Jackson are studying for their biology exam. They come across a question about biomolecules. They want to know which biomolecule contains carbon, hydrogen, oxygen, nitrogen, and phosphorous? Mia、Olivia 和 Jackson 在準備生物考試時，遇到了一個關於生物大分子的問題。他們想知道哪種生物大分子含有碳、氫、氧、氮和磷？



A.Carbohydrates 碳水化合物 B.Lipids 脂質
C.Proteins 蛋白質 D.Nucleic Acids 核酸

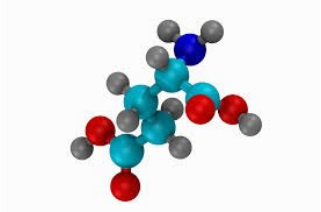
8.James, Luna, and Benjamin are having a picnic. They brought different types of food. James brought carbohydrates, Luna brought lipids, and Benjamin brought proteins. If Luna's food is left out in the sun, it won't spoil because it is hydrophobic. Which biomolecule did Luna bring? James、Luna 和 Benjamin 正在野餐，他們帶來了不同類型的食物。James 帶了碳水化合物，Luna 帶了脂質，Benjamin 帶了蛋白質。如果 Luna 的食物暴露在陽光下，它不會變質，因為它是疏水性的。Luna 帶的是哪種生物大分子？

A.Carbohydrates 碳水化合物 B.Lipids 脂質
C.Proteins 蛋白質 D.Nucleic Acids 核酸

9.The correct order of acidic strength of carboxylic acids is 羧酸的酸性強度排序正確的是？

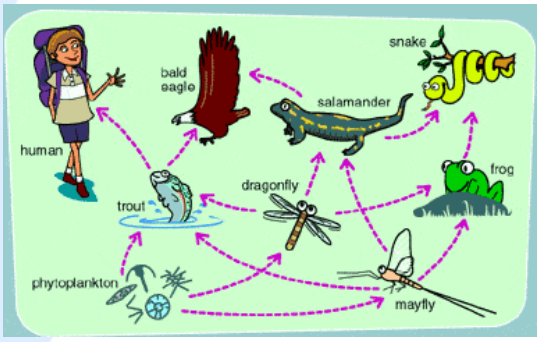
A.Formic acid < benzoic acid < acetic acid
甲酸 < 苯甲酸 < 乙酸
B.Formic acid < acetic acid < benzoic acid
甲酸 < 乙酸 < 苯甲酸
C.Acetic acid < Formic acid < benzoic acid
乙酸 < 甲酸 < 苯甲酸
D.Acetic acid < benzoic acid < Formic acid
乙酸 < 苯甲酸 < 甲酸

10.What two elements make up the amino group? 氨基基 (Amino group) 由哪兩種元素組成？



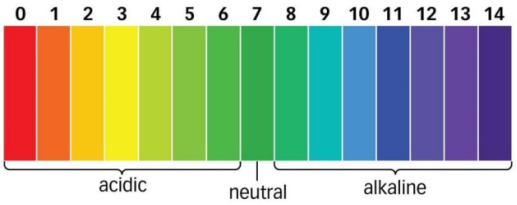
A.Hydrogen, Oxygen 氫、氧
B.Nitrogen, Oxygen 氮、氧
C.Potassium, Hydrogen 鉀、氫
D.Hydrogen, Nitrogen 氫、氮

11.Use the diagram answer the question. What is a fitting description for this diagram? 根據圖示回答問題：哪個是對這個圖示的合適描述？



A.A Food Chain 食物鏈
B.An Ecosystem 生態系統
C.A Food Web 食物網
D.Biotic and Abiotic Factors 生物與非生物因子

12.At what pH range the rate of enzyme catalysed reaction is maximum? 在何種 pH 範圍內，酶催化反應的速率最高？

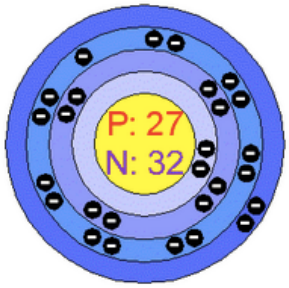


A.5 to 7 5 到 7 B.6 to 8 6 到 8
C.7 to 9 7 到 9 D.8 to 9 8 到 9

13.Which of the following is a natural polymer? 以下哪一項是天然聚合物？

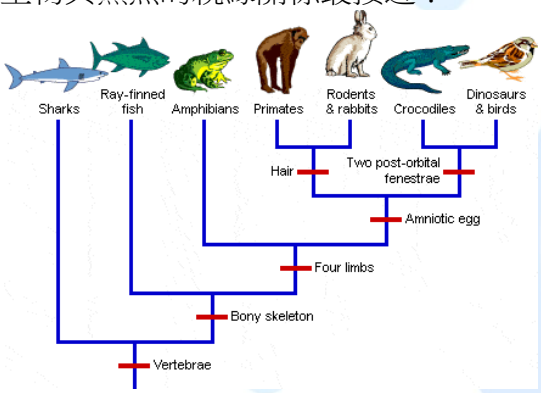
A.Cotton 棉花 B.Nylon 尼龍
C.Polyethene 聚乙烯 D.Perspex 有機玻璃

14. What is the mass number of this element?
這元素的質量數是多少？



A.5 B.27 C.32 D.59

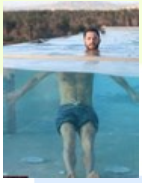
15.Who is the closest relative to the sharks?
哪種生物與鯊魚的親緣關係最接近？



A.cannot tell 無法判定 B.sharks 鯊魚
C.ray-finned fish 輻鰭魚 D.amphibians 兩棲動物

16. Which of the following is not an example of refraction? 下列哪一項不是折射 (Refraction) 的例子？

A

B


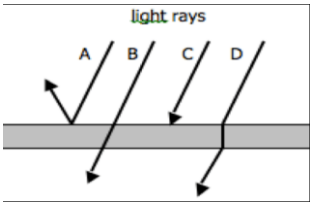
C

D

17.What type of image is formed in a plane mirror? 平面鏡中形成的影像是哪種類型？

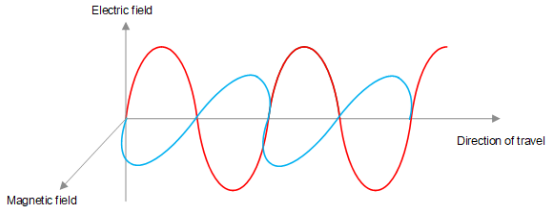
A.Real 真實影像 B.Virtual 虛擬影像
C.Enlarged 放大影像 D.Small 縮小影像

18. Which letter shows reflection?
哪條光路顯示了反射？



A.Pathway A 路徑 A B.Pathway B 路徑 B
C.Pathway C 路徑 C D.Pathway D 路徑 D

19. Select the correct order of waves on the EM Spectrum from low to high energy
請選出從低能量到高能量的電磁波順序：

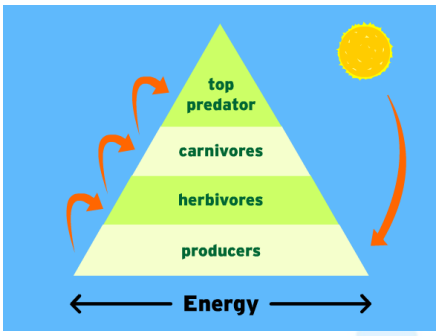


A.Radio, Micro, Infra, Visible, Ultra, X-ray, Gamma
無線電波 → 微波 → 紅外線 → 可見光 → 紫外線 → X 射線 → 伽馬射線
B.Gamma, X-ray, Ultra, VisIble, Infra, Micro, Radio
伽馬射線 → X 射線 → 紫外線 → 可見光 → 紅外線 → 微波 → 無線電波
C.Visible, Micro, Infra, Ultra, X-ray, Gamma, Radio
可見光 → 微波 → 紅外線 → 紫外線 → X 射線 → 伽馬射線 → 無線電波
D.Micro, Radio, Visible, Infra, Ultra, X-ray, Gamma
微波 → 無線電波 → 可見光 → 紅外線 → 紫外線 → X 射線 → 伽馬射線

20. When John plugs in a toy and turns it on, a marble is carried up to the top of a slide. At the top, a marble is released and it goes down a slide. What kind of energy transformation occurs to make this toy work? John 插上玩具並打開開關後，彈珠被運送到滑道頂端，然後從頂端滑下。這個玩具運作時經歷了哪種能量轉換？

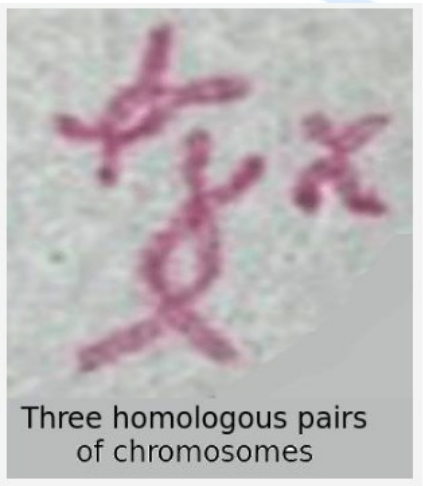
A.chemical to heat 化學能轉換為熱能
B.electrical to chemical 電能轉換為化學能
C.sound to electrical 聲能轉換為電能
D.electrical to mechanical 電能轉換為機械能

21. In the energy pyramid here, how much of the energy in the producers gets passed to the herbivores in percentage? 在這個能量金字塔中，生產者的能量有多少百分比傳遞給草食動物？



A. 1% B. 5% C. 10% D. 20%

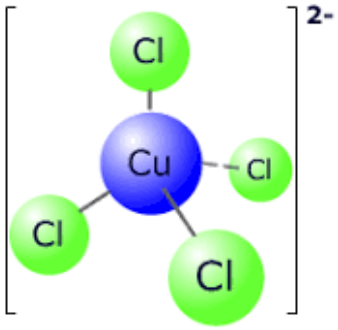
22. The diagram shows pairs of homologous chromosomes. How many chiasmata can be seen in total? 根據圖示，這對同源染色體共有多少個交叉點 (Chiasmata)？



A. 3 B. 4 C. 5 D. 6

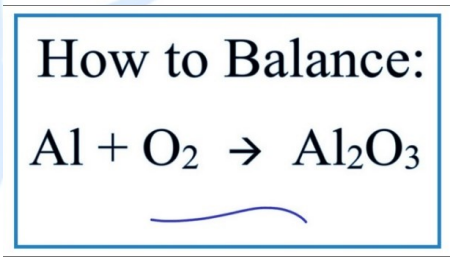
23. What is the coordination number of this complex? 下列化學反應的反應級數是多少？
$4Al + 3O_2 \rightarrow 2Al_2O_3$

tetrachloro cuprate (II) ion



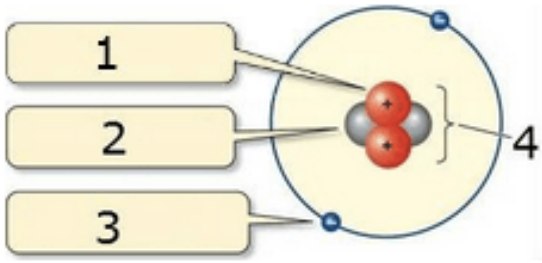
A. 2 B. 3 C. 4 D. 6

24. What is the degree of the following chemical reaction? $4Al + 3O_2 \rightarrow 2Al_2O_3$
下列化學反應的反應級數是多少？
$4Al + 3O_2 \rightarrow 2Al_2O_3$



A. 4 B. 7 C. 6 D. 8

25. What number indicates an electron?
哪個數字表示電子？



A.1 B. 2 C. 4 D. 3