1. What is the mass of 0.75 moles of $(NH_4)_3PO_4$? (Ar: N=14, H=1,P=31, 0=16)

0.75 摩爾 $(NH_4)_3PO_4$ 的質量是多少？ (Ar: N=14, H=1,P=31, 0=16)

A.101.75 g 公克 B.121.75 g 公克
C.111.75 g 公克 D.131.75 g 公克

2. What is a solvent? 什麼是溶劑？

A.the liquid in which a solute is dissolved to form a solution. 溶質溶解形成溶液的液體。
B.Another word for solution 解決方案的另一種說法
C.A thing that make drinks turn colors 讓飲料變色的東西
D.Its a metal molecule 它是一個金屬分子

3. What is the definition of a renewable resource? 可再生資源的定義是什麼？

A.things that don't run out 用不完的東西
B.things that do run out 用完的東西
C.stuff that makes things happen 讓事情發生的東西
D.none of the above 以上都不是

4. Fossil fuels are classified as nonrenewable because they..... 化石燃料被歸類為不可再生能源，因為它們.....

A.require expensive equipment 需要昂貴的設備
B.take millions of years to replace 需要數百萬年才能更換
C.can be found all over 隨處可見
D.provide all the energy we use 提供我們使用的所有能源

5. Exothermic reactions... 放熱反應...

A.Absorb energy 吸收能量
B.Release energy 釋放能量
C.Release Color 發布顏色
D.Absorb Color 吸收顏色

6. When does a chemical reaction stop? 化學反應什麼時候停止？

A.When the lab is finished 當實驗室完成時
B.When the excess reactant is used up 當多餘的反應物用完時
C.When the limiting reactant is used up 當限制反應物用完時
D.Chemical reactions never stop 化學反應永不停止

7. What is essential for a combustion reaction to begin? 燃燒反應開始的必要條件是什麼？

A.Carbon dioxide 二氧化碳
B.Fuel 燃料
C.Fuel, oxygen and heat 燃料、氧氣和熱量
D.Water and oxygen 水和氧氣

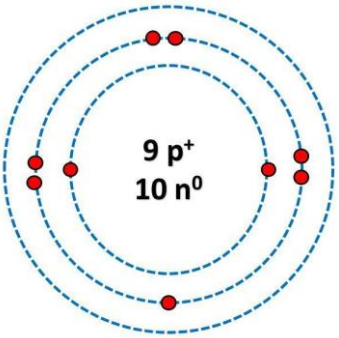
8. Which of the following shows the correct way to balance the chemical equation? 以下哪項顯示了平衡化學方程式的正確方法？

$Fe + O_2 -> Fe_2O_3$
A.$4Fe + 3O_2 -> 2Fe_2O_3$
B.$2 Fe + 3O_2 -> Fe_2O_6$
C.$4 Fe + O_6 -> 2Fe_2O_3$
D.None of the options are correctly balanced. 沒有一個選項是正確平衡的。

9. Balance the following chemical equation:
平衡下列化學方程式：
__$KClO_3$ → __KCl + _O_2
A.$2KClO_3 \rightarrow 4KCl + O_2$
B.$4KClO_3 \rightarrow 2KCl + 3O_2$
C.$2KClO_3 \rightarrow 2KCl + 3O_2$
D. None of them 沒有一個正確

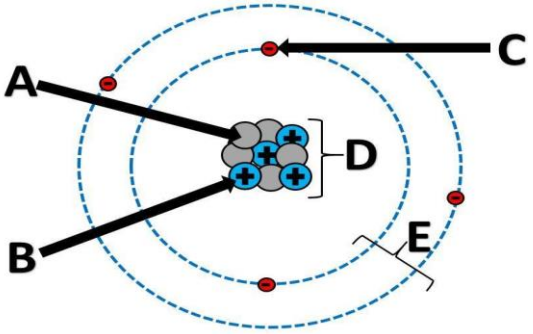
10. What are the maximum number of electrons that go on the first 3 energy levels?
A.2,4,16
B.2,8,18
C.4,8,12
D.3,4,6

11. What is the atomic number of the atom pictured? 圖中原子的原子序數是多少？



A.9
B.10
C.18
D.19

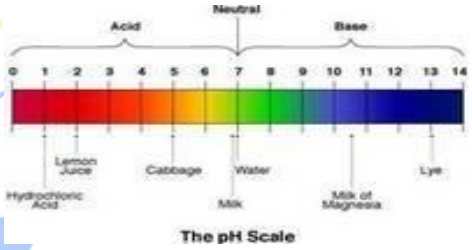
12. Which letter represents the nucleus? 哪個字母代表原子核？



A. A B. B C. D D. E

13. Do acids and bases conduct electricity? 酸和鹼導電嗎？
A.Only acids conduct electricity 只有酸才能導電
B.Only bases conduct electricity 只有鹼基導電
C.Bases and acids conduct electricity 鹼和酸導電
D.Neither conduct electricity 沒有一個導電

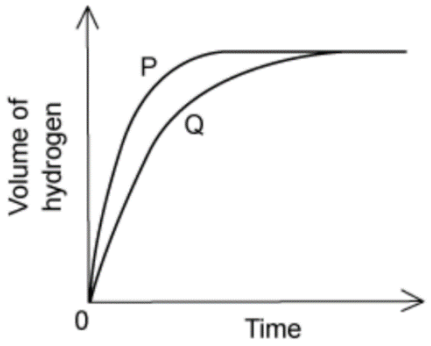
14. According to the pH range given in the image,which substance is more acidic than lemon juice? 根據圖中給出的 pH 值範圍，哪種物質的酸性比檸檬汁強？



A.Hydrochloric acid 鹽酸
B.Cabbage 捲心菜
C.Milk 牛奶
D.Milk Of Magnesia 鎂乳

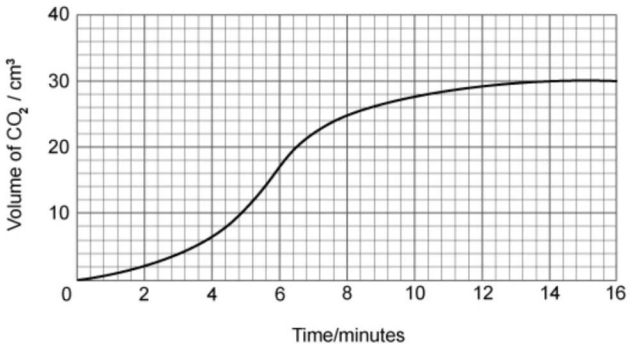
15. How does temperature increase the rate of a chemical reaction? 溫度如何提高化學反應的速率？
A.Provides lower energy route for the reaction so that a greater number of particles have enough energy to react. 為反應提供較低的能量途徑，使更多的粒子有足夠的能量進行反應。
B.Increased number of collisions increases the chance of a 'successful collision'碰撞次數的增加增加了“成功碰撞”的機會
C.Particles collide faster and harder so a larger proportion have greater energy than the required activation energy. 粒子碰撞得更快、更猛烈，因此更大比例的粒子具有比所需活化能更大的能量。
D.Greater number of 'active sites' available for a reaction to take place (referring to solids) 更多的“活性位點”可用於發生反應（指固體）

16. A student conducted 2 experiments, P and Q, involving the reaction between iron and an acid. The volume of hydrogen produced was measured.
Which of the following could explain the difference between P and Q? 一名學生進行了 2 個實驗，P 和 Q，涉及鐵和酸之間的反應。 測量產生的氫氣體積。
以下哪項可以解釋 P 和 Q 之間的區別？



A.Student added a catalyst in P 學生在 P 中添加了催化劑
B.Larger piece of iron was used in P 在 P 中使用了較大的一塊鐵
C.Less concentrated acid was used in P 在 P 中使用較少的濃酸
D.More acid and iron was used in P P 中使用了更多的酸和鐵

17. A student reacted to a carbonate with an acid and measured the volume of carbon dioxide gas at regular intervals. Between which two times was the reaction fastest? 一名學生用酸與碳酸鹽發生反應，並定期測量二氧化碳氣體的體積。 哪兩次反應最快？

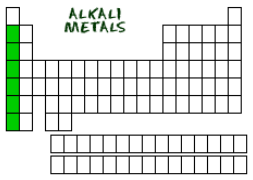


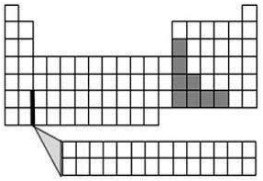
A.0-2 minutes 分鐘 B.2-4 minutes 分鐘
C.4-6 minutes 分鐘 D.8-10 minutes 分鐘

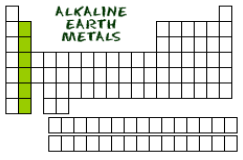
18. When non-metals react with water then 當非金屬與水反應時
A.Hydrogen gas is formed 形成氫氣
B.Carbon dioxide gas is formed 形成二氧化碳氣體
C.Non-metals do not react with water 非金屬不與水反應
D.None of these. 這些都不是。

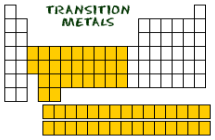
19. When zinc reacts with dilute sulphuric acid, a salt is formed with the release of a gas. The gas produced during this puts off a burning candle with a pop sound. The gas evolved during this reaction is: 當鋅與稀硫酸反應時，會形成鹽並釋放出氣體。 在此過程中產生的氣體會發出爆裂聲，使燃燒的蠟燭熄滅。 該反應放出的氣體為：
A.hydrogen sulphide 硫化氫
B.oxygen 氧氣
C.sulphur dioxide 二氧化硫
D.hydrogen 氫氣

20. Name this group: These metals are the most reactive. 給這組命名：這些金屬是最活潑的。

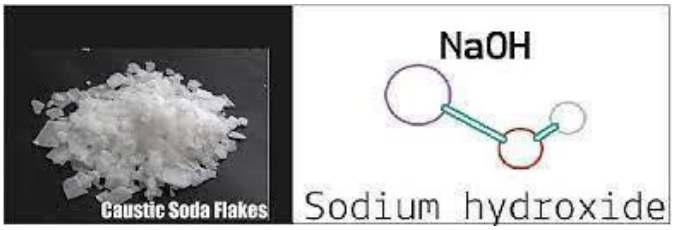
A.


B.


C.


D.


21. What is the molality of a solution made by dissolving 3 moles of NaOH in 300 grams of water in mole/kg? Write answer in number 將 3 摩爾 NaOH 溶解在 300 克水中製成的溶液的摩爾濃度是多少摩爾/千克？ 用數字寫答案



Answer (in number) 答案（數字）：

_____

22. An element with a mass number of 10 and an atomic number of 7 has how many protons? Write answer in number. 質量數為 10、原子序數為 7 的元素有多少個質子？用數字寫下答案。

Answer (in number) 答案（數字）：

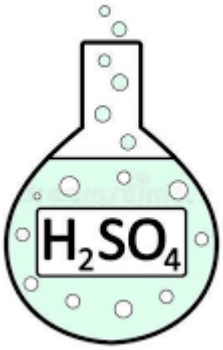
_____

23. How many ELEMENTS are in this compound: H_2SO_4. Write answer in number 該化合物中有多少種元素：H_2SO_4。 用數字寫答案

Answer (in number) 答案（數字）：

_____

24. How many ATOMS are in this compound: H_2SO_4 . Write answer in number 該化合物中有多少個原子：H_2SO_4。 用數字寫答案



Answer (in number) 答案（數字）：

_____

25. How many moles are there in 18 g of water? Write answer just in number
18 克水有多少摩爾？ 用數字寫答案

Answer (in number) 答案（數字）：

_____