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# امتحان الفصل الدراسي الأول

## End of Term1 Exam



18  
2019  
العام الدراسي  
Academic Year

إذا سألك أحدهم  
ماذا تريد أن تكون في المستقبل؟  
فقل له أريد أن أكون .....

		Student No / رقم الطالب
		Student Name / اسم الطالب
		School Name / اسم المدرسة
Class / الشعبة	G10 Advance	Grade & Stream / المسار
Chemistry		Subject / المادة

This table is to be filled by markers

يملأ هذا الجدول بدقة تامة من قبل لجنة التقدير.

رقم السؤال Question No.	الدرجة Mark		اسم المقيّم 1 Marker Name 1	اسم المقيّم 2 Marker Name 2	اسم المراجع Reviser Name
	رقماً In Figures	كتابةً In Words			
Part I					
Part II					
الدرجة المستحقة Allotted Mark					



AUH000408E10ADVMCHET1P054



صف 10 متقدم  
كيمياء انجليزي

G10 Adv  
Chem Eng



## إرشادات

- تأكد من عدد أوراق كتيب الإجابة كما هو مدون على الصفحة الأولى.
- اقرأ الأسئلة جيداً ورتب أفكارك قبل البدء في الإجابة.
- اطلب المساعدة من أحد الملاحظين إذا واجهتك أية مشكلة.
- راجع إجابتك قبل تسليم كتيب الإجابة ومغادرة قاعة الامتحان.
- تحصل على 5 درجات إضافية في حال أجبت على السؤال الذي تجد بجانبه الملصق **BONUS**

### Periodic table of elements

The periodic table shows elements arranged by atomic number (1 to 118). Each element cell contains its symbol, name in Arabic, and atomic weight. The table is color-coded by groups: Group 1 (IA) is pink, Group 2 (IIA) is orange, Groups 3-10 (transition metals) are yellow, Groups 11-12 are light blue, Groups 13-18 (main groups) are purple, and the lanthanide and actinide series are light green.

### An activity series

Most active الأكثر نشاطاً	<b>METALS</b> Lithium Rubidium Potassium Calcium Sodium Magnesium Aluminum Manganese Zinc Iron Nickel Tin Lead Copper Silver Platinum Gold	الليثيوم الروبيديوم البوتاسيوم الكالسيوم الصوديوم المغنسيوم الألمنيوم المنغنيز الزنك الحديد النيكل القصدير الرصاص النحاس الفضة البلاتين الذهب
Least active الأقل نشاطاً	<b>HALOGENS</b> Fluorine Chlorine Bromine Iodine	الفلورين الكلور البروم اليود



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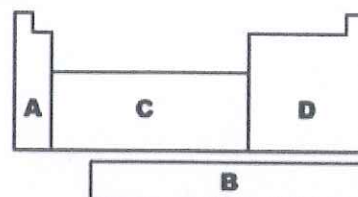
**Choose and circle the correct answer to items (1 –15)**

**1. Which elements are often used to make computer chips and solar cells?**

- a. metals  
b. nonmetals  
c. metalloids  
d. noble gases

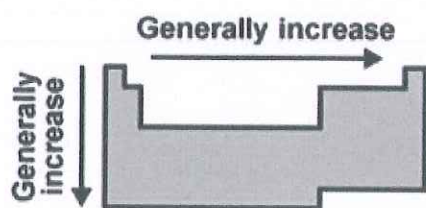
**2. Which region is referred to as the f-block on the diagram?**

- a. A  
b. B  
c. C  
d. D

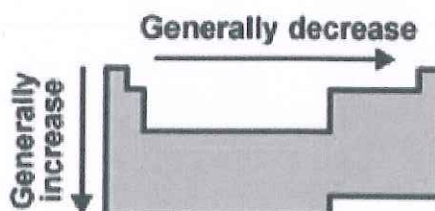


**3. Which diagram correctly depicts the trend in electronegativity?**

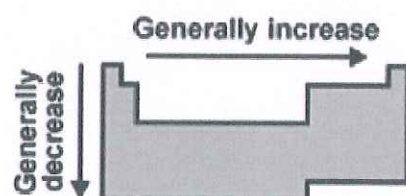
a.



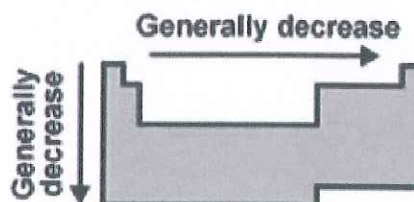
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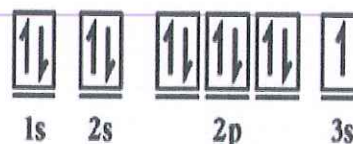
c.



d.



**4. Which ion is this atom most likely to form?**



- a.  $\text{Na}^+$   
b.  $\text{Na}^-$   
c. Ne  
d.  $\text{Mg}^{2+}$



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5. An ionic compound results from these two atoms.



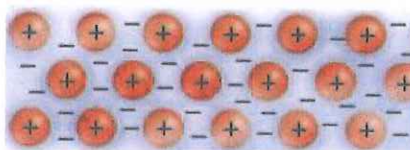
What is the correct formula for it?

- a.  $X_2Y_5$       b.  $X_5Y_2$       c.  $X_2Y_3$       d.  $X_3Y_2$

6. Which is a physical property of ionic compounds in their solid state?

- a. good conductor of electricity      b. weak attractive forces between ions  
c. low boiling point      d. high melting point

7. Which is true of the model of bonding shown in this diagram?



- a. Metallic atoms are present in a “sea” of negatively charged atoms.  
b. Valence electrons can move easily among the metallic nuclei.  
c. The substance is easy to break.  
d. Cations can easily carry heat and electricity from one region to another.

8. Which combination of bonds is present in this molecule?



- a. 1 sigma bond only      b. 1 sigma bond and 1 pi bond  
c. 2 pi bonds      d. 2 sigma bonds

9. How many single covalent bonds can carbon form?

- a. 1      b. 2      c. 3      d. 4



10. Which exception to the octet rule is shown by this molecule?



- a. uneven number of valence electrons      b. Suboctet  
c. expanded octet      d. coordinate covalent bond



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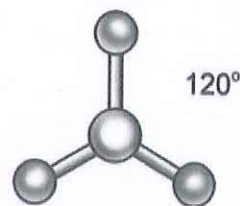






11. Which type of molecular shape is shown by this molecule?

- a. trigonal pyramidal  
 b. tetrahedral  
 c. Bent  
 d. trigonal planar



12. Look at the electronegativity difference in the table.

Which kind of bond is present in the compound  $\text{OF}_2$ ?

element	electronegativity
oxygen	3.44
fluorine	3.98

- a. ionic  
 b. metallic  
 c. polar covalent  
 d. nonpolar covalent

13. Which is **NOT** a sign of a double displacement reaction?

- a. gas may be formed  
 b. water may be produced  
 c. a precipitate is formed  
 d. the coefficients are equal

14. Use the activity series shown to predict which reaction will occur.

Activity Series for Halogens	
Fluorine	Most Active  Least Active
Chlorine	
Bromine	
Iodine	

- a.  $\text{NaBr} + \text{I}_2 \rightarrow$   
 b.  $\text{KBr} + \text{F}_2 \rightarrow$   
 c.  $\text{LiF} + \text{Cl}_2 \rightarrow$   
 d.  $\text{NaCl} + \text{I}_2 \rightarrow$

15. Which is/ are the product(s) of this chemical reaction?



- a.  $\text{Fe}(\text{OH})_3 + 3\text{NH}_4\text{Cl}$   
 b.  $3\text{NH}_4\text{Fe} + \text{Cl}_3\text{OH}$   
 c.  $3\text{NH}_4\text{Cl} + 3\text{FeOH}$   
 d.  $3\text{FeCl}_3\text{NH}_4\text{OH}$



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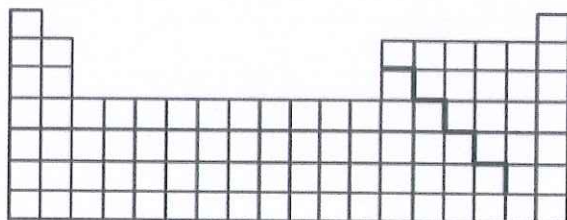




**Part two**

55

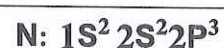
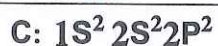
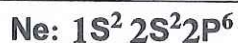
16. Label the periodic table with the terms in the bot.



- F: noble gases
- D :lanthanide series
- C: alkali metals
- G: halogens
- B: element with the highest electronegativity



17. Put the elements in order from smallest to biggest atomic size.



(smallest) .....then..... Then..... Then..... (biggest)

18. Put the compounds in order from least to highest melting point

(Least) .....then..... Then..... (highest)

Compound	Lattice Energy (kJ/mol)
AgCl	910
KI	632
MgO	3795

Give a scientific explanation for the items (19-21)

19. The second ionization energy of sodium is very high as compared to the first ionization energy.

.....

.....

20. The lattice energy of MgO is almost four times greater than that of NaF

.....

.....

21. A water molecule has a bent shape with a bond angle of  $104.5^\circ$ ?

.....

.....



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22. In the equation for the formation of the ionic compound below, what anion and cation will be formed?



(Give your answer in noble gas notation as well as by using the appropriate chemical symbol.)

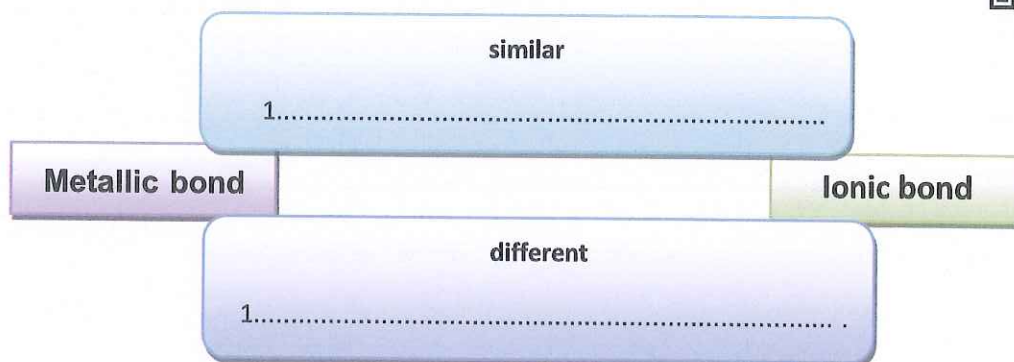
Anions: .....

Cations: .....

23. Name these compounds:

KOH : ..... NH<sub>4</sub>ClO<sub>4</sub>: .....

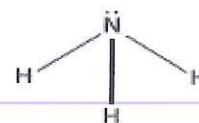
24. Compare and contrast the two types of bonds.



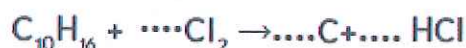
25. Complete the table below with names and formulas.

Name	.....	Nitrogen monoxide	.....	Phosphoric acid	.....
Formula	HNO <sub>2</sub>	.....	HI	.....	N <sub>2</sub> O <sub>4</sub>

26. Look at the ammonia (NH<sub>3</sub>) molecule. Is it polar? Why?



27. Add the correct coefficients to balance this equation.



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**28. Match the symbolic equation in list (A) to the reaction in list (B)**

list (A) symbolic equation		list (B) type of chemical reaction
$A + B \rightarrow AB$		single-replacement
$AB \rightarrow A + B$		double-replacement
$A + BX \rightarrow AB + X$		combustion
$AX + BY \rightarrow AY + BX$		Synthesis
		decomposition

**29. Look at this balanced chemical equation:**  $\text{CaCl}_2(\text{aq}) + \text{K}_2\text{CO}_3(\text{aq}) \rightarrow 2\text{KCl}(\text{aq}) + \text{CaCO}_3(\text{s})$

- Write the complete ionic equation

.....

- What are the spectator ions? .....

- Write the net ionic equation

.....

**30. Student draws Lewis structure for formaldehyde,  $\text{CH}_2\text{O}$  as shown: **BONUS****



- What is incorrect in the drawing? Explain why?

.....  
 .....

- Draw the right Lewis structure for  $\text{CH}_2\text{O}$ . list the steps used to draw it.

.....  
 .....  
 .....  
 .....

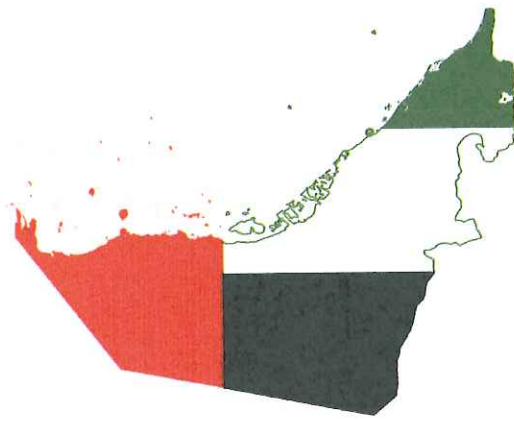
THE END



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MOE.G10.ADV.CHEM.E.T1.2018

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