

A



Chem. 110  
Exam. 2  
Time : 120 min  
2012 – 2013 1<sup>st</sup> term

**Model (A)**

Name:
Number:
Section:

**Useful information:**

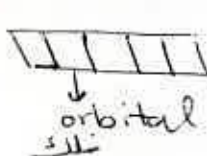
Gas constant, $R = 0.082 \text{ L atm K}^{-1} \text{ mol}^{-1}$	Speed of light, $c = 3.0 \times 10^8 \text{ m/s}$
$1 \text{ atm} = 760 \text{ mmHg} = 1.01325 \times 10^5 \text{ Pa}$	Planck's cons., $h = 6.626 \times 10^{-34} \text{ J.S}$
Rydberg cons. for H atom, $R_H = 2.179 \times 10^{-18} \text{ J}$	

With the best wishes

***General Chemistry Team work***

A





**Directions:** For each of the following questions, choose the letter that **best** answers the question and place it on your answer sheet.

<p>1. The number of orbitals in a d subshell is:</p> <p>(A) 3 (B) 7 (C) 5 (D) 1</p> 	<p>2. What is the total number of electrons in the <math>n=4</math> level?</p> <p><math>2n^2 = 2(4^2) = 2 \times 16 = 32</math></p> <p>(A) <math>16 e^-</math> (B) <math>32 e^-</math> (C) <math>4 e^-</math> (D) <math>8 e^-</math></p>																														
<p>3. Which one of the following is a valid statement of Avogadro's law?</p> <p>(A) <math>V = \text{constant} \times T</math> (B) <math>V = \text{constant} \times P</math> (C) <math>V = \text{constant} \times n</math> (D) <math>V = \text{constant} \times d</math></p> <p><math>\frac{V_1}{n_1} = \frac{V_2}{n_2}</math> <math>\frac{V}{n} = \text{constant}</math> <math>V = \text{constant} \times n</math></p>	<p>4. Which of the following electronic configurations represents a <u>paramagnetic</u> atom?</p> <table><tr><th></th><th>1s</th><th>2s</th><th colspan="3">2p</th></tr><tr><td>(A)</td><td><math>\uparrow\downarrow</math></td><td><math>\uparrow\downarrow</math></td><td><math>\uparrow\downarrow</math></td><td><math>\uparrow\downarrow</math></td><td><math>\uparrow\downarrow</math></td></tr><tr><td>(B)</td><td><math>\uparrow\downarrow</math></td><td><math>\uparrow\downarrow</math></td><td><math>\uparrow</math></td><td><math>\uparrow</math></td><td><math>\uparrow</math></td></tr><tr><td>(C)</td><td><math>\uparrow\downarrow</math></td><td><math>\uparrow\downarrow</math></td><td><math>\uparrow</math></td><td><math>\uparrow</math></td><td><math>\uparrow</math></td></tr><tr><td>(D)</td><td><math>\uparrow\downarrow</math></td><td><math>\uparrow\downarrow</math></td><td><math>\uparrow</math></td><td><math>\uparrow</math></td><td><math>\uparrow</math></td></tr></table>		1s	2s	2p			(A)	$\uparrow\downarrow$	$\uparrow\downarrow$	$\uparrow\downarrow$	$\uparrow\downarrow$	$\uparrow\downarrow$	(B)	$\uparrow\downarrow$	$\uparrow\downarrow$	$\uparrow$	$\uparrow$	$\uparrow$	(C)	$\uparrow\downarrow$	$\uparrow\downarrow$	$\uparrow$	$\uparrow$	$\uparrow$	(D)	$\uparrow\downarrow$	$\uparrow\downarrow$	$\uparrow$	$\uparrow$	$\uparrow$
	1s	2s	2p																												
(A)	$\uparrow\downarrow$	$\uparrow\downarrow$	$\uparrow\downarrow$	$\uparrow\downarrow$	$\uparrow\downarrow$																										
(B)	$\uparrow\downarrow$	$\uparrow\downarrow$	$\uparrow$	$\uparrow$	$\uparrow$																										
(C)	$\uparrow\downarrow$	$\uparrow\downarrow$	$\uparrow$	$\uparrow$	$\uparrow$																										
(D)	$\uparrow\downarrow$	$\uparrow\downarrow$	$\uparrow$	$\uparrow$	$\uparrow$																										
<p>5. A mixture of gases contains 4.46 mol of Kr and 0.74 mol of Xe. Calculate the partial pressure of the Xe gas if the total pressure is 1.51 atm?</p> <p>(A) 0.214 atm (B) 1.295 atm (C) 2.314 atm (D) 0.765 atm</p> <p><math>P_i = X_i P_T</math> <math>X_i = \frac{n_i}{n_T}</math> <math>X_{Xe} = \frac{0.74}{4.46 + 0.74} =</math></p>	<p>6. The general outermost electron configuration of all elements in group 7A</p> <p>(A) <math>nS^2nP^1</math> (B) <math>nS^2nP^5</math> (C) <math>nS^2nP^4</math> (D) <math>nS^2nP^6</math></p>																														
<p>7. An example of a <u>monatomic</u> gas is:</p> <p>(A) Helium (B) Chlorine (C) Oxygen (D) Nitrogen</p>	<p>8. Which of the following pressure values is the <u>smallest</u>?</p> <p>(A) 595 mmHg (B) 1.00 atm (C) 1181 torr (D) 167 Pa</p> <p>must be converted to atm.</p>																														
<p>9. A 0.250 L vessel contains 1.25 g of a gas at 0.94 atm and <math>28.0^\circ\text{C}</math>. What is the molar mass of the gas?</p> <p>(A) 133.35 g/mol (B) 137.35 g/mol (C) 139.35 g/mol (D) 131.35 g/mol</p> <p><math>M = \frac{dRT}{P}</math> <math>d = \frac{m(g)}{V(L)}</math></p>	<p>10. The four quantum numbers for the last electron in Phosphorous (<math>P_{15}</math>) atom are:</p> <p>(A) <math>n=2, l=1, m_l=-1, m_s=+1/2</math> (B) <math>n=3, l=3, m_l=-1, m_s=+1/2</math> (C) <math>n=3, l=1, m_l=+1, m_s=+1/2</math> (D) <math>n=2, l=1, m_l=-1, m_s=-1/2</math></p>																														

3/11/2

$P_{15} = [Ne] 3s^2 3p^3$   
 $\begin{array}{|c|c|c|c|} \hline 1 & 1 & 1 & 1 \\ \hline \end{array}$



<p>11. Which of the following statements about the quantum numbers is <u>incorrect</u>?</p> <p>(A) <math>n</math> has integral values from 1 to <math>\infty</math>  <del>(B)</del> <math>l</math> has values from 1 to <math>\infty</math>          (C) <math>m_l</math> has values of <math>-l</math> to <math>+l</math> including zero          (D) <math>m_s</math> has values of <math>+1/2</math>, <math>-1/2</math></p>	<p>12. What is the volume (in liters) occupied by 49.8 g of HCL at STP ?</p> <p>(A) <math>V = 33.4</math> L <math>PV = nRT</math>  <del>(B)</del> <math>V = 30.6</math> L          (C) <math>V = 3.06</math> L          (D) <math>V = 3.04</math> L</p>
<p>13. Which one of the following sets of quantum numbers is not possible?</p> <p>(A) (3, 0, 0, <math>+1/2</math>)          (B) (4, 3, -2, <math>-1/2</math>)          (C) (1, 0, 0, <math>+1/2</math>)  <del>(D)</del> (3, 2, 1, 0)</p>	<p>14. Which pair of atoms has the same numbers of <u>unpaired electrons</u>?</p> <p>(A) Si and Cl  <del>(B)</del> Al and Cl          (C) Mg and Cl          (D) N and Cl</p> <p><math>17\text{Cl}: [\text{Ne}] 3s^2 3p^5</math>  <math>13\text{Al}: [\text{Ne}] 3s^2 3p^1</math></p>
<p>15. Which anion contains <u>the largest number</u> of electrons?</p> <p>(A) <math>\text{P}^{3-}</math> <math>15 + 3 = 18</math>  <del>(B)</del> <math>\text{Se}^{2-}</math> <math>34 + 2 = 36</math>          (C) <math>\text{Si}^{4-}</math> <math>14 + 4 = 18</math>          (D) <math>\text{S}^{2-}</math> <math>16 + 2 = 18</math></p>	<p>16. The electron configuration of chromium (ii) ion, <math>\text{Cr}^{2+}</math>, is:</p> <p>(A) <math>[\text{Ar}] 4s^2 3d^2</math>          (B) <math>[\text{Ar}] 4s^1 3d^5</math>  <del>(C)</del> <math>[\text{Ar}] 3d^4</math>          (D) <math>[\text{Ar}] 4s^2 3d^4</math></p> <p><math>24\text{Cr}: [\text{Ar}] 4s^1 3d^5</math>  <math>\text{Cr}^{2+}: [\text{Ar}] 3d^4</math></p>
<p>17. Acetylene (<math>\text{C}_2\text{H}_2</math>) burns in air according to the equation</p> $2\text{C}_2\text{H}_{2(g)} + 5\text{O}_{2(g)} \rightarrow 4\text{CO}_{2(g)} + 2\text{H}_2\text{O}_{(l)}$ <p>Calculate the volume of <math>\text{O}_2</math> (in liters) required for combustion of 4.5 L of acetylene (<math>\text{C}_2\text{H}_2</math>).</p> <p><del>(A)</del> 11.25 L          (B) 12.25 L          (C) 10.25 L          (D) 13.25 L</p>	<p>18. Select the term best describing the series of elements: Mn, Fe, Co, Ni, Cu.</p> <p><del>(a)</del> d-transition metals          (b) representative elements          (c) metalloids          (d) alkaline earth metals</p>
<p>19. The emission spectrum of gold shows a line of wavelength <math>2.676 \times 10^{-7}</math> m. How much energy is emitted as the excited electron falls to the lower energy level?</p> <p><del>(a)</del> <math>7.43 \times 10^{-19}</math> J          (b) <math>5.30 \times 10^{-20}</math> J          (c) <math>6.05 \times 10^{-19}</math> J          (d) <math>3.60 \times 10^{-20}</math> J</p> <p><math>E = h\nu = \frac{hc}{\lambda}</math>  <math>7.5 \frac{\text{m/s}}{\text{m}}</math></p>	<p>20. Which of the orbital diagrams is <u>not following</u> the <u>pauli exclusion principle</u>?</p> <p><del>(A)</del> </p> <p>(B) </p> <p>(C) </p> <p>(D) </p>

A

<p>21. Calculate the density of (HBr) gas in grams per liter at 733 mmHg and 46°C.</p> <p>(A) 2.98 g/L (B) 2.11 g/L (C) 4.54 g/L (D) 45.4 g/L</p> <p><math>d = \frac{PM}{RT}</math></p>	<p>22. Under constant-pressure conditions a sample of hydrogen gas initially at 88°C and 9.6 L is cooled until its final volume is 3.4 L. What is its final temperature?</p> <p>(A) <math>T_2 = 311.6</math> K (B) <math>T_2 = 12.79</math> K (C) <math>T_2 = 127.9</math> K (D) <math>T_2 = 31.16</math> K</p>
<p>23. All the following statements are correct <u>except</u>:</p> <p>(A) Metals have relatively low ionization energies compared to nonmetals (B) For a given group ionization energy increases with increasing atomic number (C) Cation is always smaller than atom from which it is formed (D) Anion is always bigger than atom from which it is formed</p>	<p>24. The correct order of <u>radius</u> of the following ions is:</p> <p>(A) <math>S^{2-} &lt; Cl^{-1} &lt; P^{-3} &lt; K^{+1}</math> (B) <math>S^{2-} &gt; P^{-3} &gt; K^{+1} &gt; Cl^{-1}</math> (C) <math>P^{-3} &gt; S^{2-} &gt; Cl^{-1} &gt; K^{+1}</math> (D) <math>K^{+1} &gt; Cl^{-1} &gt; S^{2-} &gt; P^{-3}</math></p> <p><math>K^{+} &lt; Cl^{-} &lt; S^{2-} &lt; P^{-3}</math> increasing <math>S^{2-} &gt; Cl^{-} &gt; P^{-3} &gt; K^{+}</math> decreasing</p>
<p>25. Which element has the <u>largest</u> atomic radius?</p> <p>(A) Li (B) Na (C) Cs (D) K</p>	<p>26. The correct order of <u>ionization energy</u> of the following is:</p> <p>(A) <math>Si &lt; P &lt; S</math> (B) <math>Si &lt; S &lt; P</math> (C) <math>Si &gt; S &gt; P</math> (D) <math>Si &gt; P &gt; S</math></p>
<p>27. The Argon atom (Ar) is <u>isoelectronic</u> with which one of the following: <math>\{ \}</math></p> <p>(A) <math>8O^{2-} \rightarrow 10e^{-}</math> (B) <math>11Na^{+} \rightarrow 10e^{-}</math> (C) <math>19K^{+} \rightarrow 18e^{-}</math> (D) <math>13Al^{+3} \rightarrow 10e^{-}</math></p>	<p>28. The following orbital diagram corresponds to the element-----:</p> <p> <math>\uparrow\downarrow</math> <math>\uparrow\downarrow</math> <math>\uparrow\downarrow</math> <math>\uparrow\downarrow</math> <math>\uparrow\downarrow</math> <math>\uparrow\downarrow</math> <math>\uparrow</math>          1s 2s 2p 3s 3p       </p> <p>(A) P (B) Cl (C) S (D) Br</p>
<p>29. The number of <u>valence electrons</u> in carbon atom (C) is:</p> <p>(A) 6 (B) 3 (C) 4 (D) 2</p>	<p>30. In which group would an element of <u>atomic number 33</u> be placed:</p> <p>(A) 7A group (B) 5A group (C) 1A group (D) 3A group</p>



$$4A < 6A < 5A$$
  
$$Si < S < P$$

lanthanum 57 <b>La</b> 138.91	cerium 58 <b>Ce</b> 140.12	praseodymium 59 <b>Pr</b> 140.91	neodymium 60 <b>Nd</b> 144.24	promethium 61 <b>Pm</b> (145)	samarium 62 <b>Sm</b> 150.36	europium 63 <b>Eu</b> 151.96	gadolinium 64 <b>Gd</b> 157.25	terbium 65 <b>Tb</b> 158.93	dysprosium 66 <b>Dy</b> 162.50	holmium 67 <b>Ho</b> 164.93	erbium 68 <b>Er</b> 167.26	thulium 69 <b>Tm</b> 168.93	ytterbium 70 <b>Yb</b> 173.04
actinium 89 <b>Ac</b> (227)	thorium 90 <b>Th</b> 232.04	protactinium 91 <b>Pa</b> 231.04	uranium 92 <b>U</b> 238.03	neptunium 93 <b>Np</b> (237)	plutonium 94 <b>Pu</b> (244)	americium 95 <b>Am</b> (243)	curium 96 <b>Cm</b> (247)	berkelium 97 <b>Bk</b> (247)	californium 98 <b>Cf</b> (251)	einsteinium 99 <b>Es</b> (252)	fermium 100 <b>Fm</b> (257)	mendeleevium 101 <b>Md</b> (258)	nobelium 102 <b>No</b> (259)

\* \* Actinide series

1. To calculate the NO. of orbitals in d subshell  
 you can use:  $2l+1 = 2(2)+1$   
 $= 5$  orbitals

l	0	1	2	3
Type	s	p	d	f

The choice (C) is correct.

2. The total NO. of electrons in  $n=4$   
 you can calculate it by applying  $(2n^2)$   
 $2(4)^2 = 2(16) = 32 e^-$

The choice (B) is correct.

3. Valid statement for Avogadro's law:

Avogadro's law:  $\frac{V_1}{n_1} = \frac{V_2}{n_2}$

or  $\frac{V}{n} = \text{Constant}$

So  $V = \text{Constant} \times n$

The correct choice is (C).

4. Paramagnetic atom: which has outermost subshell is not complete with electrons

The correct choice (C).

5.  $n_{Kr} = 4.46 \text{ mol}$      $n_{Xe} = 0.74 \text{ mol}$

$P_{Xe} = ??$      $P_T = 1.51 \text{ atm}$   
 Partial pressure

$P_i = X_i P_T$  where  $X_i$  is mole fraction المسئولية

$$X_i = \frac{n_i}{n_T}$$

For Xe

$$P_{Xe} = X_{Xe} P_T$$

$$X_{Xe} = \frac{n_{Xe}}{n_{Xe} + n_{Kr}}$$

$$= \frac{0.74}{4.46 + 0.74} = 0.142$$

$$P_{Xe} = 0.142 \times 1.51 = \underline{\underline{0.214 \text{ atm}}}$$

The correct choice is (A)

6. التوزيع الإلكتروني  
 The outermost electron configuration in group 7A.  
التوزيع الإلكتروني  
 The electron configuration of of an element in specified  
المجموعة  
 group is equal the No. of group
- For 7A:  $ns^2 np^5 \rightarrow Fe^-$  توزيع

The correct choice is (B).

7. الغازات النبيلة  
 monoatomic gas  $\rightarrow$  All noble gases are monoatomic gases.

- (A) Helium  $\rightarrow He$   
 (B) chlorine  $\rightarrow Cl_2$   
 (C) oxygen  $\rightarrow O_2$   
 (D) Nitrogen  $\rightarrow N_2$

The correct choice is (A).



8. The smallest pressure.

(3)

- (A) 595 mmHg
- (B) 1.00 atm
- (C) 1181 torr
- (D) 167 Pa

for comparison it must be converted  
all these pressure values to  
atm

$$(A) \frac{595 \text{ mmHg}}{760 \text{ mmHg/atm}} = 0.782 \text{ atm}$$

$$(B) 1.00 \text{ atm}$$

$$(C) \frac{1181 \text{ torr}}{760 \text{ torr/atm}} = 1.554 \text{ atm}$$

$$(D) \frac{167 \text{ Pa}}{1.01325 \times 10^5 \text{ Pa/atm}} = 1.648 \times 10^{-3} \text{ atm} = 0.00165 \text{ atm}$$

The correct choice is (D).

9.  $V = 0.250 \text{ L}$     $m = 1.25 \text{ g}$     $P = 0.94 \text{ atm}$   
 $T = 28 + 273 = 301 \text{ K}$     $M (\text{g/mol}) = ??$

$$\mu = \frac{dRT}{P}$$

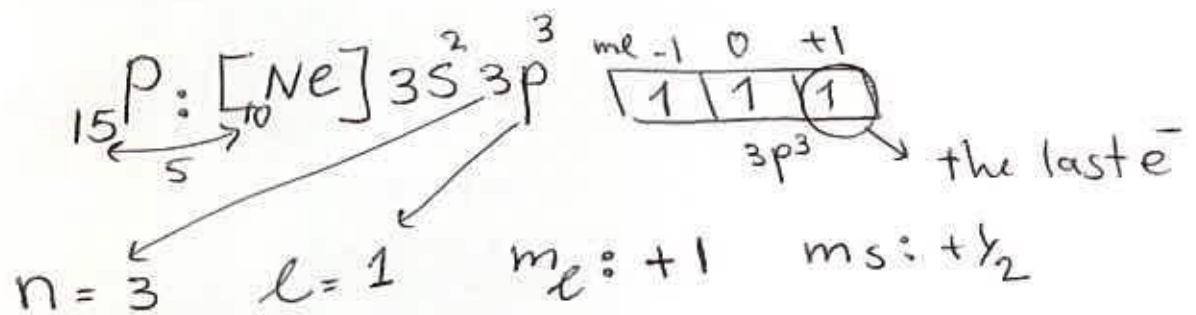
First, calculate density  $\rightarrow d = \frac{m(\text{g})}{V(\text{L})}$   
 $= \frac{1.25}{0.250} = 5 \text{ g/L}$

$$M = \frac{5 \times 0.082 \times 301}{0.94} = 131.29 \text{ g/mol}$$

The correct choice is (D).



10. To determine the four quantum No. for the last  $e^-$  in  ${}_{15}P$ :



The correct choice is (C).

11. Statement about quantum No. is incorrect

The correct choice is (B) because  $l$  has values from 0, ..., (n-1) not 1 to  $\infty$ .

12.  $V = ?$   $m = 49.8(g)$   $HCl$   $STP$   
 $p = 1 \text{ atm}$   $T = 273 K$

ideal gas Eq.

$$PV = nRT \Rightarrow V = \frac{nRT}{P}$$

$$n = \frac{m(g)}{M(g/mol)} = \frac{49.8 g}{(1 \times 1.008) + (1 \times 35.45)} = \frac{49.8}{36.458} = 1.366 \text{ mol}$$

$$V(L) = \frac{1.366 \times 0.082 \times 273}{1} = 30.58 L \approx 30.6 L$$

The correct choice is (B)

13. Set of quantum No. is not possible

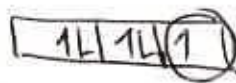
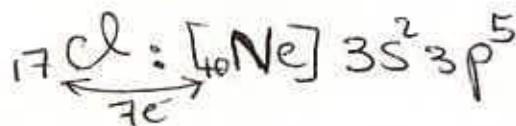
First we must looking the  $m_s: \pm \frac{1}{2}$  ← the possible values of  $m_s$

The correct choice is (D) because  $m_s$  is 0 and This is not possible.

14. the pair of atoms has the same NO. of unpaired e<sup>-</sup>.

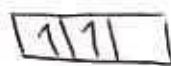
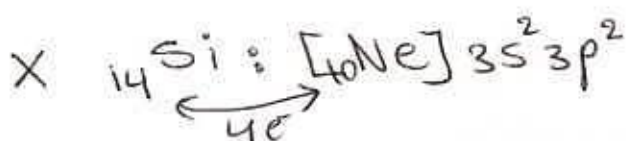
- (A) Si and Cl
- (B) Al and Cl
- (C) Mg and Cl
- (D) N and Cl

all the choices contain Cl atom, So electron configuration for Cl.



Cl contain 1 unpaired electron

we must looking for atom contain the same unpaired electron like Cl.



Si has 2 unpaired e<sup>-</sup>



Al has 1 unpaired e<sup>-</sup>  
Like Cl

The correct choice is (B)



15. Anion contains the largest NO. of  $e^-$

(6)

(A)  $P^{3-} : 15 + 3 = 18e^-$

(B)  $Se^{2-} : 34 + 2 = 36e^- \rightarrow \text{the largest}$

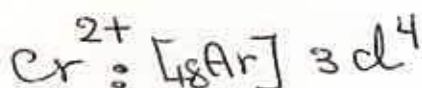
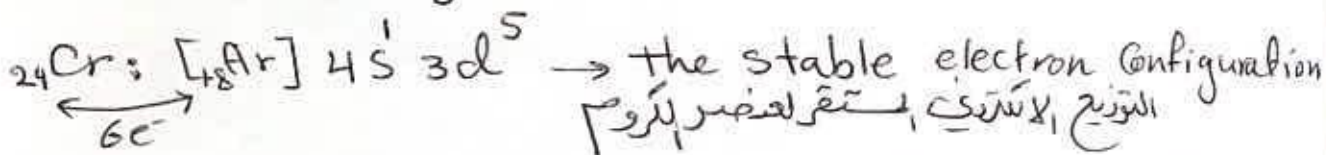
(C)  $Si^{4-} : 14 + 4 = 18e^-$

(D)  $S^{2-} : 16 + 2 = 18e^-$

$\rightarrow$  atomic NO. of atom.  
العدد الذري

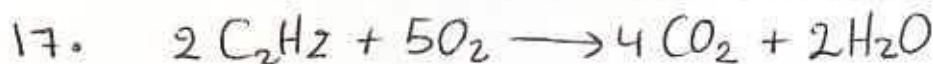
The correct choice is (B).

16. The electron Configuration of  $Cr^{2+}$



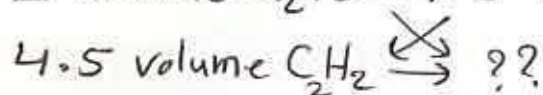
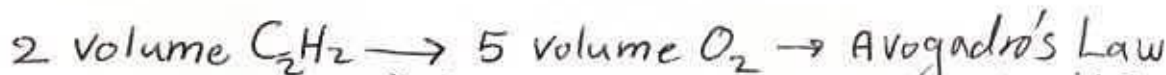
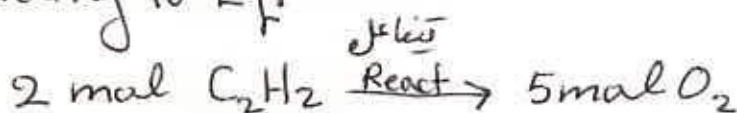
First: remove  $e^-$  from ns  
Second: remove  $e^-$  from (n-1)d

The correct choice is (C).



$V_{O_2} = ?? \quad V_{C_2H_2} = 4.5 L$

According to Eq.



$n \propto V$

volume (L) of  $O_2 = \frac{4.5 \times 5}{2} = 11.25 L$

The correct choice is (A).

18. The term best describing the elements  
Mn, Fe, Co, Ni, Cu

All these elements are transition metals  
جميع هذه العناصر هي معادن انتقالية

The correct choice is (A).

19.  $\lambda = 2.676 \times 10^{-7} \text{ m}$   $E = ??$

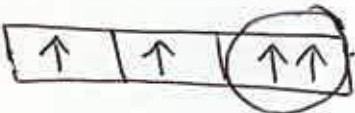
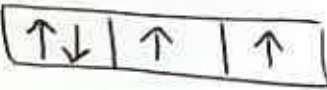
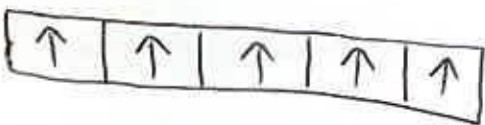
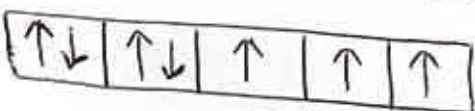
$$E = h\nu = h \frac{c}{\lambda} = 6.626 \times 10^{-34} \text{ J}\cdot\text{s} \times \frac{3 \times 10^8 \text{ m/s}}{2.676 \times 10^{-7} \text{ m}}$$

$$= 7.428 \times 10^{-19} \text{ J.}$$

$$\approx 7.43 \times 10^{-19} \text{ J}$$

The correct choice is (A)

20. orbital diagram is not follow the pauli exclusion

- (A)  → in the same room  
the two electrons have  
( $+\frac{1}{2}$ ) spin quantum No.
- (B) 
- (C) 
- (D) 

The correct choice is (A).

21.  $d = ??$  HBr  $P = \frac{733}{760} \text{ mmHg}$   $T = 46 + 273$   
 $= 0.964 \text{ atm}$   $= 319 \text{ K}$

$$d = \frac{PM}{RT}$$

$$M_{\text{HBr}} = (1 \times 1.008) + (1 \times 79.90)$$

$$= 80.908 \text{ g/mol}$$

$$= \frac{0.964 \times 80.908}{0.082 \times 319} = 2.98 \text{ g/L}$$

The correct choice is (A)



22.  $T_1: 88 + 273 = 361 \text{ K}$   $V_1: 9.6 \text{ L}$   $V_2: 3.4 \text{ L}$   
 $T_2: ??$

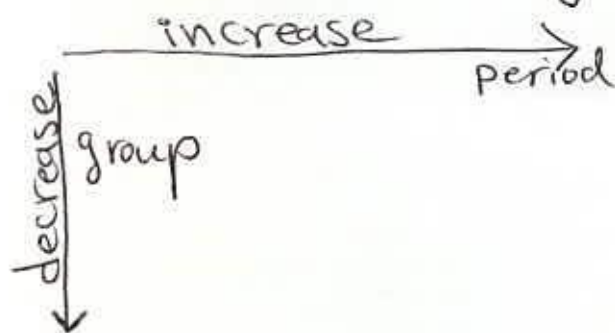
$$\frac{V_1}{T_1} = \frac{V_2}{T_2} \rightarrow \text{charl's law}$$

$$T_2 = \frac{T_1 V_2}{V_1} = \frac{361 \times 3.4}{9.6} = 127.9 \text{ K}$$

The correct choice is (C)

23. All statements are correct except:

(B) for a given group ionization energy increases with increasing atomic No. X



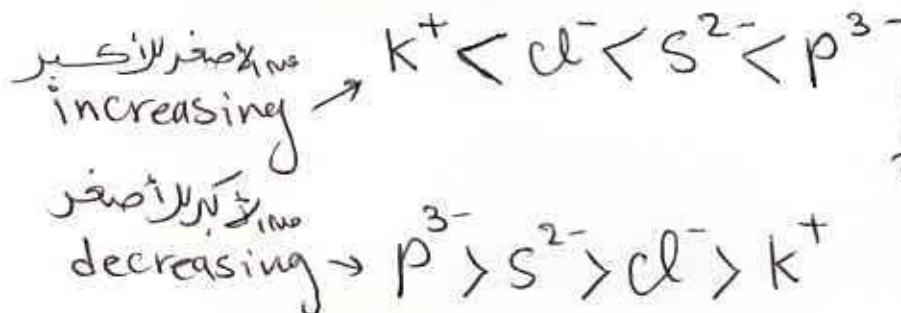
decrease

24. Correct order of Radius

الترتيب لصغير  
لنصف قطر



Cations < atoms < anions



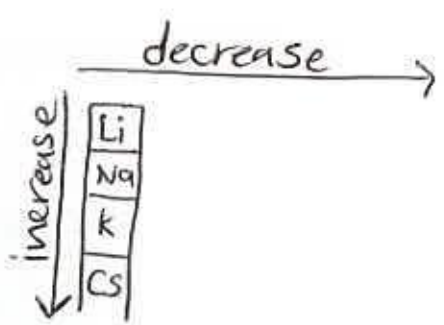
الأيونات: الأصغر ذات شحنة  
 السالبة، الأصغر  
 الكاتيونات: الأصغر ذات شحنة موجبة  
 الأكبر

The correct choice is (C).

25. Element has Largest atomic Radius نصف قطر ذري

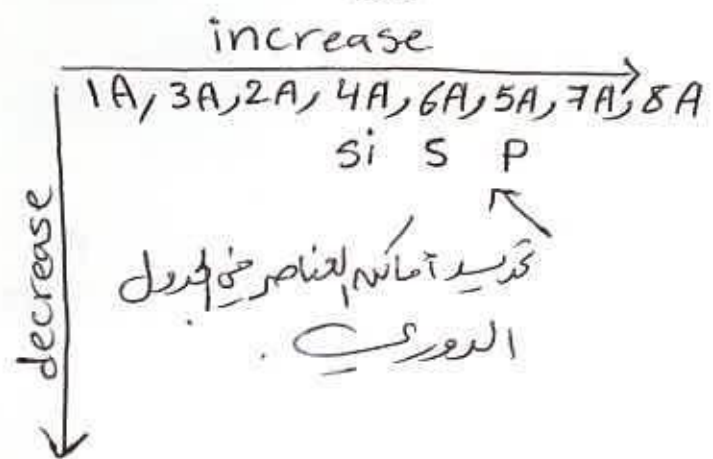
9

- (A) Li
- (B) Na
- (C) Cs
- (D) K



26. Correct order of ionization Energy طاقة تأين

$Si < S < P$   
 Correct choice is  
 (B)

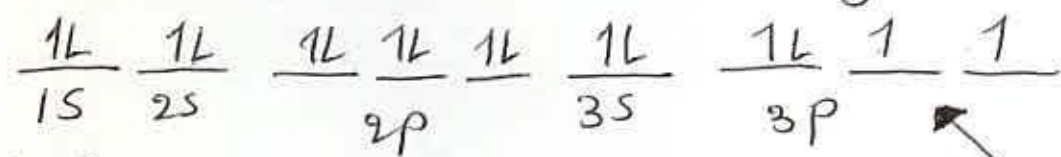


27. isoelectronic of Ar  $\rightarrow 18e^-$  متساوية الإلكترونات

- (A)  $O^{2-} \rightarrow 8 + 2 = 10e^-$
  - (B)  $Na^+ \rightarrow 11 - 1 = 10e^-$
  - (C)  $K^+ \rightarrow 19 - 1 = 18e^-$
  - (D)  $Al^{3+} \rightarrow 13 - 3 = 10e^-$
- atomic No.

The correct choice is (C)

28. The element has the orbital diagram



- (A) P
- (B) Cl
- (C) S
- (D) Br

نوع عدد إلكترونات  
 جزيء (16e)  
 والعنصر لذري له عدد لذري 16 هو S



29. Valence electrons in C

(10)

C  $\rightarrow$  element in 4A group

So valence  $e^-$  is equal the group No.

قسم المجموعه تساوي الالكترونات السائمه

The correct choice is (C)

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30. atomic No. 33 be placed:

Referencing to periodic table the element

الموجود في الجدول الدوري

has atomic No. 33 is AS and belongs to

group 5A

The correct choice is (B).

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