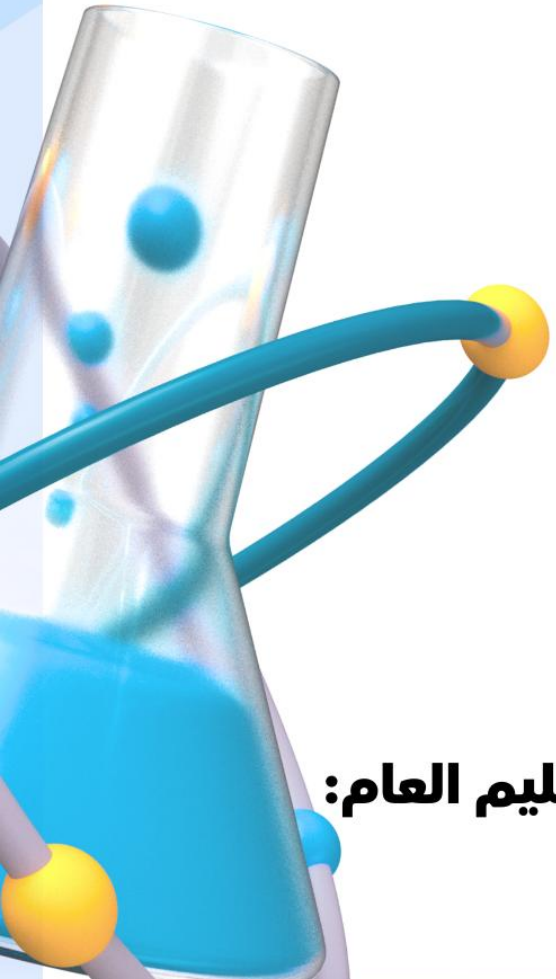
الإدارة المركزية للتعليم العام
مكتب تنمية مادة العلـــــوم

CHEMISTRY

2nd secondary
first term

HOME PERFORMANCE



إعداد:
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د. هالة عبدالسلام خفاجي

2026

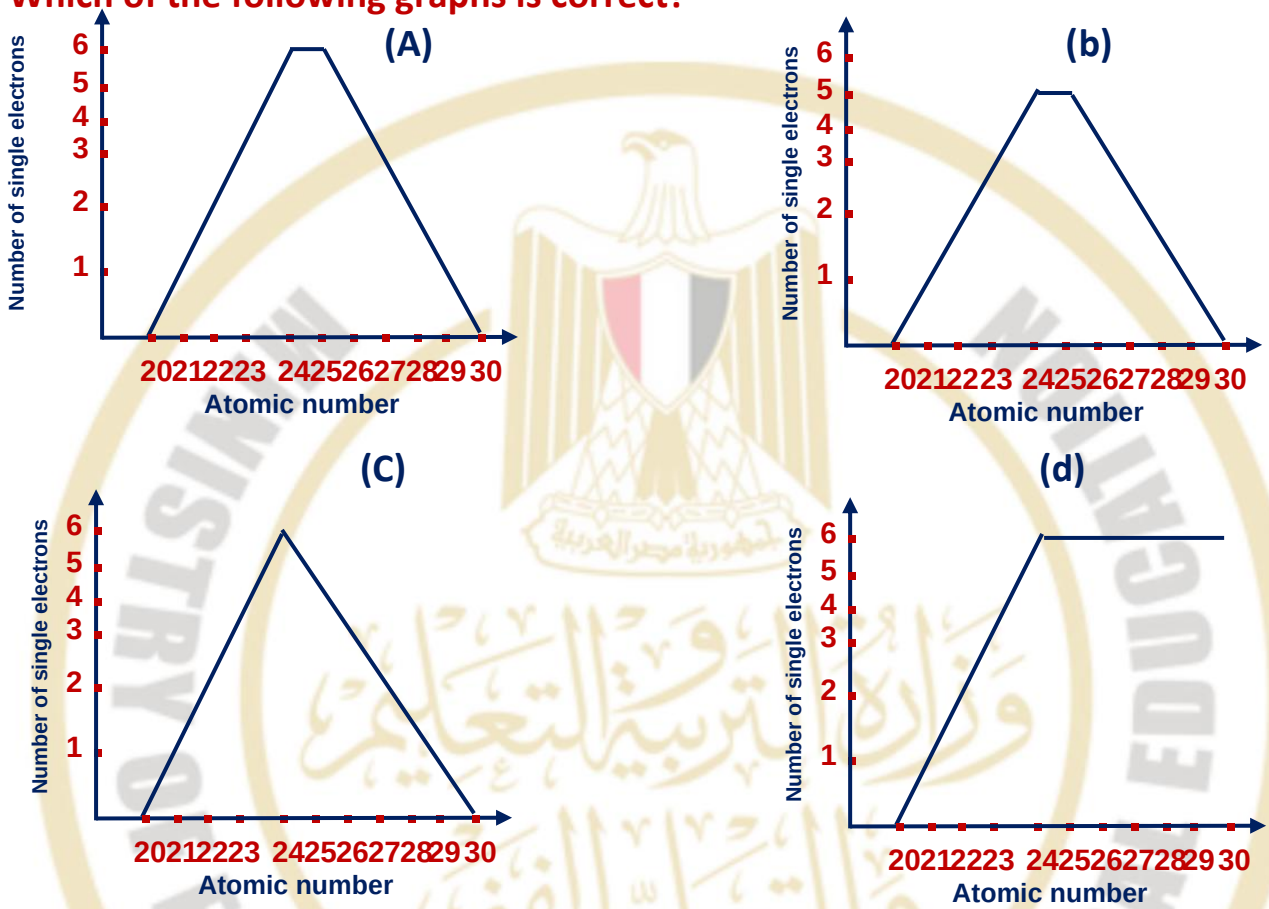
week

8

Home performance (Week 8)

Q1/ Choose the correct answer:-

1-Which of the following graphs is correct?



2- An element (X) contains number of electrons in sublevel (4s) equal to number of electrons in (3d), so the electronic configuration of (X^{2+}) is:

(a) $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 4S^2, 3d^2$

(b) $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 4S^2$

(C) $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 3d^2$

(d) $1s^2, 2s^2, 2p^6, 3s^2, 3p^6$

3- The element in which all its electrons are distributed in six completed energy sublevels, its atomic number = ……

(a) 1

(b) 10

(C) 18

(d) 20



4- Atom of an element contain one single electron in (p) sublevel, so its atomic number equal ……..

(a) 12 or 15
(b) 31 or 17
(C) 14 or 15
(d) 11 or 14

5-The four quantum numbers of the last electron in an atom (n=3 , ℓ =2, mℓ = -2, m_s= +1/2) so its atomic number :

(a) 11
(b) 17
(C) 21
(d) 26

Question (2): - State the scientific reason for each of the following:

1- The (s) subshell fills with electrons before (d) subshell, even though it is Farther from the nucleus.

……

2-Electrons prefer to singularly distribute in the orbitals of the same sublevel first.

……

3- The paired electrons in the same orbital don't repel in although their same Negative charge.

……

4- Although the values of (n+ ℓ) for both subshells (4p) and (3d) are equal, the Energy of (4p) is higher.

……

……

5- The element chromium ($_{24}$Cr) has an abnormal electron distribution.

……

……

6- The copper element ($_{29}$Cu) has an abnormal electron distribution.

……

……



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WEEKLY ASSESSMENTS



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2026

week

8

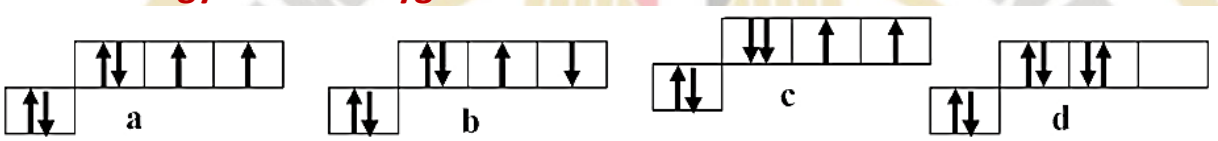
Weekly assessment (Week-8)

Q1/ Choose the correct answer:-

1-Which of the following represents the number of orbitals partially filled with electrons for an element with atomic number 19?

(a) 1
(b) 7
(c) 10
(d) 15

2-Which of the following diagram shows the correct distribution of electrons in the last energy level of oxygen atom?



3- If you know that the sum of spin quantum numbers of electrons of an Element = 3, then the atomic number of the element is……

(a) 24 (b) 25
(C) 26 (d) 27

4- Electronic distribution of (X^{1+}) ion whose nucleus contains 29 protons:

(a) $1S^2$, $2S^2$, $2P^6$, $3S^2$, $3p^6$, $3d^9$
(b) $1S^2$, $2S^2$, $2P^6$, $3S^2$, $3p^6$, $4S^2$,$3d^8$
(C) $1S^2$, $2S^2$, $2P^6$, $3S^2$, $3p^6$, $3d^{10}$
(d) $1S^2$, $2S^2$, $2P^6$, $3S^2$, $3p^6$, $4S^1$,$3d^{10}$

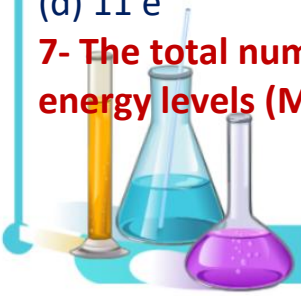
5- What are the quantum numbers whose value never be negative?

(a) Principle and subsidiary
(b) Principle and spin
(C) Magnetic and subsidiary
(d) Magnetic and spin

6- What is the number of the electrons which have magnetic quantum number $m\ell = 0$ in cobalt (II) ion $_{27}Co^{2+}$?

(a) 7 e^-
(b) 8 e^-
(C) 10 e^-
(d) 11 e^-

7- The total number of the orbitals which are filled with electrons in the two energy levels (M + L) of the atom of argon $_{18}Ar$ is ……

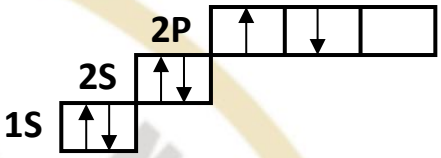


(a) 4
(b) 8
(C) 9
(d) 13

8- The number of half-filled orbitals in the element whose atomic number (42) = …

(a) 4
(b) 6
(C) 2
(d) 5

9- What is the incorrect about this orbital diagram?



(a) Both arrows in the 2P box should be pointing up
(b) There is nothing incorrect with this diagram
(C) In the 2P box there should be 2 electrons in the first box
(d) All the arrows should be pointing up

10- The number of electrons of an atom in a certain element containing first four full-filled Sublevels and one half filled Sublevel equals ……..

(a) 7 (b) 10
(C)15 (d) 18

Question (2):

1- An element its third energy level contains numbers of electrons equals the sum of electrons in first and second energy levels.
-Apply Pauli Exclusion Principle on valences electrons.

……

2- The four quantum numbers for the valance electron of an atom are ($n = 4$, $\ell = 0$, $m\ell = 0$, $m_s = -1/2$) , and The number of electrons in the third energy level is the sum of the number of electrons in the first and second energy levels. Write the Electronic configuration for this element and for its 2+ ion.

……

3- Determine the possible four quantum numbers of the furthest electrons in scandium atom $_{21}Sc$.

……

……

4 - An element contains one electron in the last sublevel , if the quantum numbers of that electron are : (n = 3 , ℓ = 1 , m_l = -1 , m_s = $+\frac{1}{2}$) .

-Calculate the atomic number of the element.

……

……

