

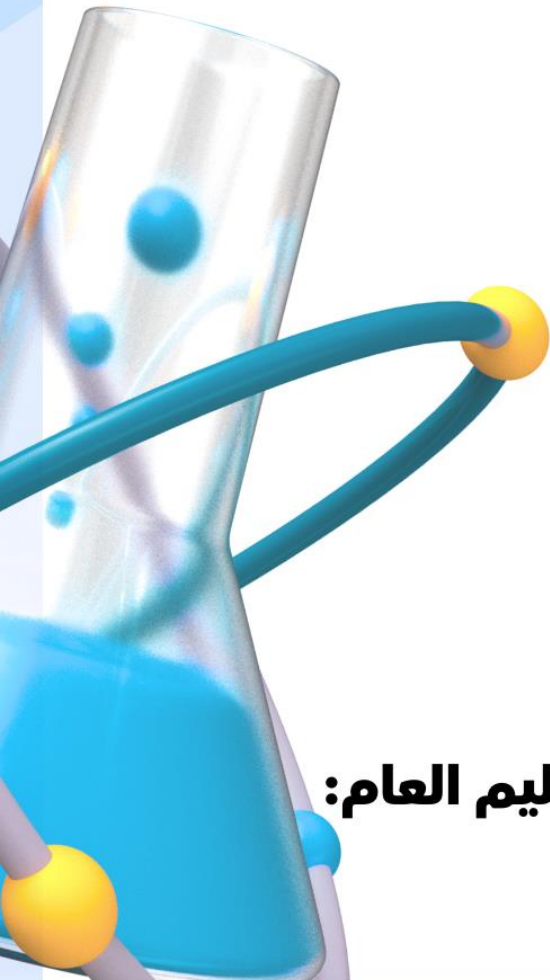
الإدارة المركزية للتعليم العام
مكتب تنمية مادة العلوم



CHEMISTRY

2nd secondary
first term

HOME PERFORMANCE



إعداد:

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رئيس الإدارة المركزية للتعليم العام:

د. هالة عبدالسلام خفاجي

2026

week

6

Home performance (Week 6)

Q1/ choose the correct answer:-

1- What happens to the energy required to excite an electron from level (n) To level (n+1) as the value of (n) increases?

- (a) The energy required for the transition decreases.
- (b) The energy required remains constant.
- (c) It is equal to the energy required for the transition from (n=1) to (n=2).
- (d) The energy required for the transition increases

2- If an electron moves from level (n=5) to level (n=1) and then returns to level (n=3), to which level must the electron return in order to emit a visible photon?

- (a) To level (n=4)
- (b) To level (n=1)
- (c) To level (n=3)
- (d) To level (n=2)

3- All of the following were later modified in the Bohr model due to the model's Inability to explain certain phenomena and concepts, except for?

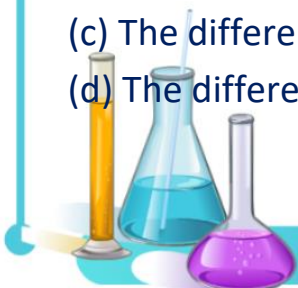
- (a) Electrons are only material particles
- (b) Electrons revolve in specific orbits
- (c) Atoms are flat and not three-dimensional
- (d) It is not possible to determine the speed and location of an electron at the Same time

4- The amount of energy required to transfer an electron from the first level (K) To the third level= (M)

- (a) Half a quantum
- (b) One quantum
- (c) 2 quanta
- (d) 3 quanta

5- The linear spectrum differs from one element to another due to.....

- (a) The difference in the number of neutrons in each.
- (b) The difference in the atomic number of each.
- (c) The difference in the mass number of each.
- (d) The difference in the number of valence electrons in each.



6- According to Bohr model, which of the following is necessary for an Electron transition from the second level ($n=2$) to the fourth level ($n=4$)?

- (a) It must lose an amount of energy equal to the difference between the Energies of the two levels.
- (b) It must gain an amount of energy equal to the difference between the Energies of the two levels.
- (c) It must lose an amount of thermal energy equal to the difference between The energies of the two levels.
- (d) It must gain an amount of energy greater than the difference between the Two levels.

7 - The spectral lines resulting from the return of electrons in hydrogen Atom to the first level is located in which region of the spectrum?

- (a) The infrared region.
- (b) The radio wave region.
- (c) The visible region.
- (d) Ultraviolet region.

8 - To obtain the visible spectrum of hydrogen atom for an electron excited To the second level (L), this electron must

- (a) Gain more energy and move to a higher level, then return to a stable state (Ground state).
- (b) Gain more energy and move to a higher level, then lose less energy than The total energy gained.
- (c) Gain more energy and move to a higher level, then lose energy equal to the Total energy gained.
- (d) Gain more energy and move to a higher level, then lose energy greater than The total energy gained.

9- All of the following cannot have a value of Zero except

- (a) Quantum
- (b) Principal quantum number (n)
- (c) Number of protons
- (d) Number of neutrons

10- The spectral lines resulting from the return of electrons in hydrogen Atom to the third level is located in which region of the spectrum?

- (a) Infrared region.
- (b) Radio wave region.
- (c) Visible region.
- (d) Ultraviolet region.



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WEEKLY ASSESSMENTS



إعداد:

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مستشار مادة العلوم:

د. عزيزة رجب خليفة

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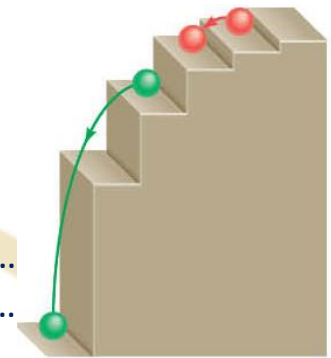
week

6

Weekly assessment (Week-6)

Question (1):-

(1) The energy levels in Bohr's atomic model can be Expressed as steps on a stair, as shown in the figure, Where the ball does not settle between the steps of the Stair... Explain the previous statement.

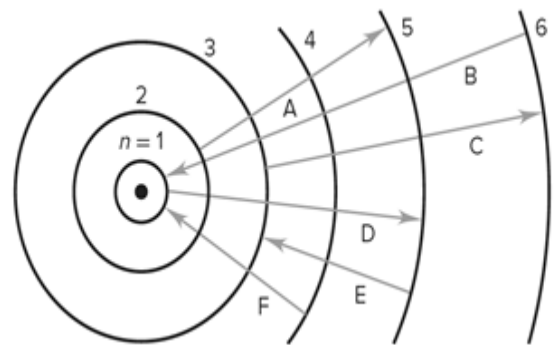


(2) The figure opposite shows Bohr's model of the hydrogen atom with several Electronic transitions indicated by arrows.

(a) Which transitions represent energy Emission and which represent energy absorption?

(b) Which electronic transitions exhibit the Highest energy absorption (A or C) and why?

(c) How much quantum is required for electronic transition (D)?



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

1- Quantum is indivisible and does not multiply.

2- The visible spectrum of hydrogen consists of only four lines.

3- Using a spectrometer, it was determined that hydrogen gas is one of the basic Components of the sun.



Question (3):-

1- Does the corresponding figure represent the visible linear spectrum of a Hydrogen atom?

-Explain the scientific basis for your answer.

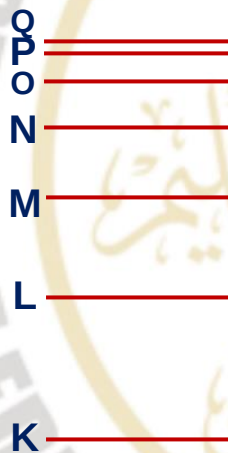


2. "The corresponding Image of a spectrometer used in atomic spectrum analysis"

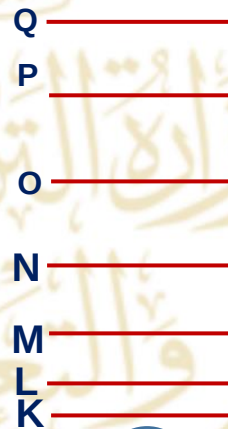
- Can this device be used to identify the type of element, and why?



3- Study the figures in front of you, which represent the energy levels around the nucleus, then answer the following questions:



Nucleus
(A)



Nucleus
(B)

- 1- Which of the above figures represents Bohr's calculations of the energy Differences between levels as we move away from the nucleus, and why?
- 2- According to your choice in the first question, which quantum has a higher Value: the quantum required transferring an electron from the first level to the Second Level, or the quantum released by the transfer of an electron from the Fourth level to the third level?
- 3- What is the relationship between the energy of a given level and its radius?

