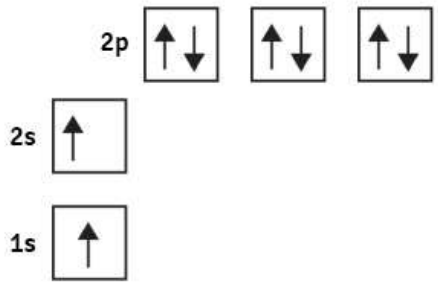
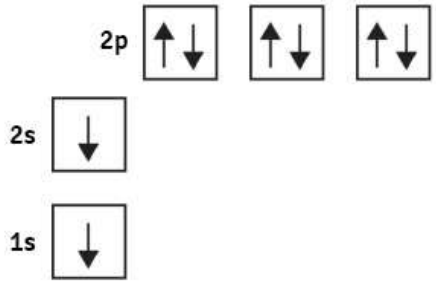
عرض المعلومات المساعدة عرض التغذية الراجعة عرض جميع الأسئلة

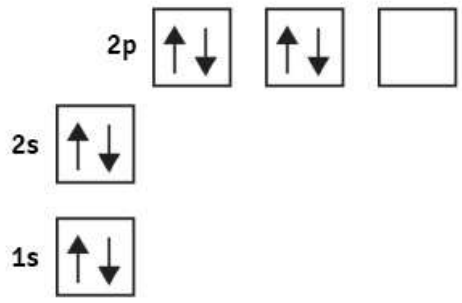
السؤال 1

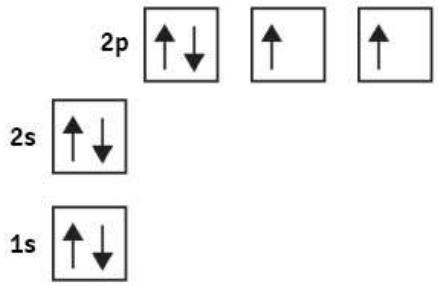
Select the best answer.

The atomic number of the element oxygen (O) is 8. Identify the orbital diagram that represents the correct order in which the electrons fill up the orbitals.









السؤال 2

Select the correct answer.

The Pauli exclusion principle_____.

- describes the wave properties of electrons in an atom
- explains the representation of valence electrons in an atom
- describes the arrangement of electrons in atomic orbitals
- states that two electrons can only occupy the same orbital if they spin in opposite directions

السؤال 3

Select the correct answer from the drop-down menu.

A(n) electron ✓ is a negatively charged fast-moving particle.

السؤال 4

Select the correct answer from the drop-down menu.

Electrons are negatively charged and repel ✓ each other.

السؤال 5

Select the correct answer.

Which statement is true about electrons?

- [x] An electron has an extremely small mass. ✓
- [ ] An electron moves through the nucleus.

- [ ] An electron has no electrical charge.
- [ ] An electron is found in specific types of matter.

السؤال 6

Select the best answer.

Study the diagram. Identify if this representation of electrons in the orbital is correct.



- [x] No. The image represents two electrons in an orbital spinning in the same direction.
- [ ] Yes. The image represents two electrons in an orbital spinning in the opposite direction.
- [ ] No. The image represents two electrons spinning with high-energy.
- [ ] Yes. The image represents two electrons spinning with low-energy.

السؤال 7

Select the correct answer.

Which of the following atoms has three unpaired electrons?

- Carbon
- Nitrogen ✓
- Boron
- Oxygen

السؤال 8

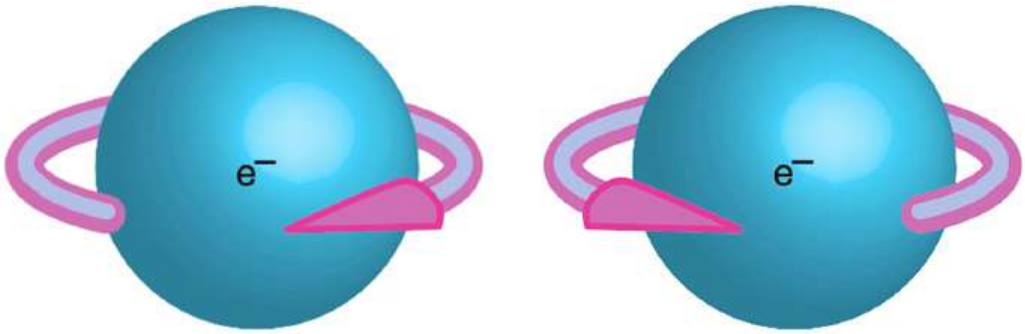
Select the best answer from the drop-down menu to complete the sentence.

The Pauli exclusion principle ✓ states that two electrons can occupy the same atomic orbital if they spin in opposite directions.

السؤال 9

Select the correct answer.

Identify what the image to the right represents.



- [x] Electrons spinning in different directions.
- [ ] Electrons occupying principal energy levels.
- [ ] Electrons spinning in the nucleus.
- [ ] Valence electrons spinning in the same direction.

السؤال 10

Drag and drop the correct answer onto the image to identify what the arrows in the image represent.

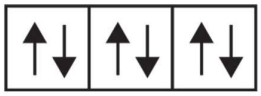
electrons moving downward towards the nucleus

electrons moving upward away from the nucleus

electrons spinning in the same direction

السؤال 11

Drag and drop the correct answer onto the image to identify what the boxes below represent.



filled orbitals

high-energy orbitals

partially filled orbitals

incomplete orbitals

السؤال 12

Select the correct answer.

Which one of the following statements is **TRUE**?

- The 3rd principal energy level only contains 8 electrons.
- Orbitals are always filled in numerical order.

Letters are used to represent the electrons in the energy sublevels.

The 4s orbital is filled before the 3d orbitals. ✓

السؤال 13

Fill in the blank using the Word Bank to complete the sentence.

Word Bank			
14	10	6	2

An orbital can accept a maximum of 2 ✓ electron/s.

السؤال 14

Select the best answer.

According to the Pauli exclusion principle, electrons in the same orbital spin in opposite directions. Why?

Electrons spin in opposite directions in the same orbital because electrons would not fit in the orbital otherwise.

Electrons spin in opposite directions in the same orbital to increase the repulsion

between the negatively charged electrons.

Electrons spin in opposite directions in the same orbital to reduce the repulsion between the negatively charged electrons. ✓

Electrons spin in opposite directions in the same orbital to reduce the attraction between the negatively charged electrons.

السؤال 15

Fill in the blanks with answers from the word bank.

Word bank					
lower energy	3s	3d	high energy	no energy	2d

Electrons enter the 4s sub-level before the 3d ✓ sub-level because the 4s orbital has lower energy ✓.