

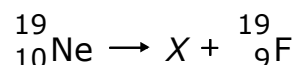
1 Expectation: C.5(B)

Halogens exist in elemental form as diatomic molecules. Which of the following best explains this property of halogens?

- A** Atoms with many electrons in their valence shells are attracted to each other by strong electrostatic forces.
- B** Halogen atoms form both monovalent cations and anions that are attracted to each other.
- C** The *d*-orbitals of halogen atoms transform into lower-energy *p*-orbitals when they form bonds.
- D** Halogen atoms can fill their valence shells by forming covalent bonds with each other.

2 Expectation: C.12(B)

Given the nuclear equation:

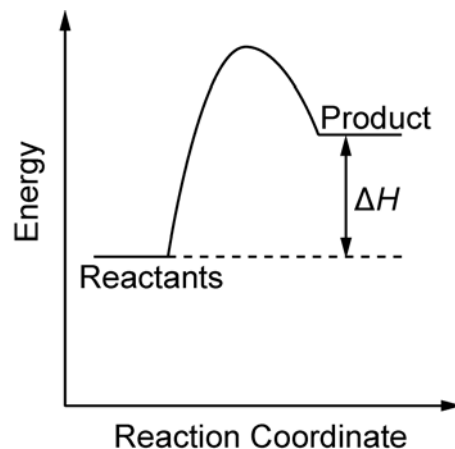


What particle is represented by *X*?

- F** Beta
- G** Positron
- H** Neutron
- J** Alpha

3 Expectation: C.11(A)

The reaction coordinate of a synthesis reaction is shown below.



What kind of energy is represented by the change in enthalpy ΔH ?

- A** Chemical energy in the bonds formed by the reaction
- B** Potential energy in the bonds broken during the reaction
- C** Thermal energy released by the reactants during the reaction
- D** Kinetic energy in the product after the reaction

4 Expectation: C.7(D)

The description of metallic bonding below was found in a chemistry textbook.

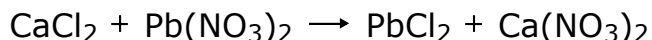
The more delocalized electrons that are involved in a metallic bond, the stronger the bond is. This is because the positive nuclei have a stronger attraction to the negatively charged sea of electrons in the metallic bond.

Which of the following properties of metals is best explained by this description of metallic bonding?

- F** High melting point
- G** Reactivity with acids
- H** Metallic luster
- J** Thermal conductivity

5 Expectation: C.10(H)

The following reaction takes place in an aqueous solution.



This reaction proceeds to completion because the reverse reaction is prevented by —

- A** the insolubility of PbCl_2 .
- B** the low temperature of the solution.
- C** an excess of CaCl_2 solution.
- D** an excess of $\text{Pb}(\text{NO}_3)_2$ solution.

6 Expectation: C.6(C)

Medium-wave AM radio is broadcast on the frequency band from 520. kHz to 1610 kHz. What is the maximum wavelength of a medium-wave AM radio wave?

- F 1.73 mm
- G 5.37 mm
- H 186 m
- J 577 m

7 Expectation: C.7(C)

Which electron dot formula correctly represents the covalent compound boron trichloride, BCl₃?

- A**

```

      :Cl:
      |
:Cl::B::Cl:
      |
      :Cl:
          
```

C

```

      :Cl:
      |
:Cl::B::Cl:
      |
      :Cl:
          
```
- B**

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      :Cl:
      |
:Cl::B::Cl:
      |
      :Cl:
          
```

D

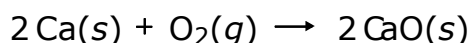
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      :Cl:
      |
:Cl::B::Cl:
      |
      :Cl:
          
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8 Expectation: C.8(E)

Read the information below.

A 4.86-gram sample of calcium reacted completely with oxygen to form 6.80 grams of calcium oxide. This reaction is represented by the balanced equation below.



What is the total mass, in grams, of oxygen that reacted?

Record your answer and fill in the bubbles on your answer document. Express your answer to the correct number of significant figures.

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Chemistry EOC Test made with STAAR Test Maker 1-800-930-TEST

Item Number	Reporting Category	Readiness or Supporting	Content Student Expectation	Process Student Expectation	Correct Answer
1	1	Readiness	C.5(B)	C.3 (A)	D
2	2	Readiness	C.12(B)		G
3	4	Supporting	C.11(A)	C.2 (H)	A
4	3	Supporting	C.7(D)	C.3 (A)	F
5	5	Readiness	C.10(H)		A
6	2	Supporting	C.6(C)	C.2 (G)	J
7	3	Readiness	C.7(C)		C
8	3	Supporting	C.8(E)	C.2 (G)	1.94