What formal charges are there in the following Lewis structure of $SO_3$?
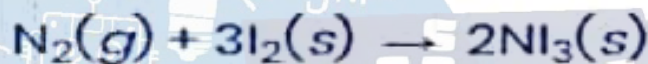
Question 11

Not yet
answered

Marked out of
2.00

Flag
question

If 954.0 mL of nitrogen gas, measured at 488.9 mmHg and 22.3°C, reacts with excess iodine according to the following reaction, what mass of nitrogen triiodide (molar mass= 394.72) is produced? (1 atm= 760 mmHg and K= °C + 273)

$$N_2(g) + 3I_2(s) \longrightarrow 2NI_3(s)$$

Select one:

○ a. 4.33 g

○ b. 3.33 g

○ c. 13.30 g

○ d. 6.65 g

○ e. 20.0 g

**Select one:**

○ a. The spin quantum number ($m_s$) describes the direction of the spin of the electron.

○ b. The magnetic quantum number ($m_l$) describes the shape of an orbital.

○ c. The principal quantum number ($n$) describes the shape of an orbital and orientation of an orbital.

○ d. The angular momentum quantum number ($l$) describes the orientation of an orbital.

● e. The principal quantum number ($n$) describes the shape of an orbital.

Clear my choice

**Question 3**

Answer saved

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⚑ Remove flag

Which of the following statements is **correct** for multi-electron atoms?

Select one:

○ a. The spin quantum number ($m_s$) describes the direction of the spin of the electron.

○ b. The magnetic quantum number ($m_l$) describes the shape of an orbital.

○ c. The principal quantum number ($n$) describes the shape of an orbital and orientation of an orbital.

○ d. The angular momentum quantum number ($l$) describes the orientation of an orbital.

● e. The principal quantum number ($n$) describes the shape of an orbital

Which of the following F-bonds is most polar?

Select one:

- a. F-Be
- b. F-O
- c. F-B
- d. F-Li
- e. F-F

Clear my choice

**Question 5**

Answer saved

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🚩 Remove flag

The element that having the highest ionization energy is:

Select one:

○ a. Na

○ b. Ca

🔵 c. Al

○ d. Mg

○ e. K

Clear my choice

The total number of atoms in 0.10 mol of $NO_2$ is:

Select one:

○ a. $2.0 \times 10^{22}$

○ b. $3.6 \times 10^{-23}$

○ c. $3.0 \times 10^{23}$

● d. $6.0 \times 10^{22}$

○ e. $1.8 \times 10^{23}$

Clear my choice

**Question 16**

Answer saved

Marked out of
2.00

⚑ Remove
flag

Which one of the following is **correct**

Select one:

- ⦿ a. The name of $MnO_2$ is manganese(II) oxide.
- ○ b. The name of $CrO_3$ is chromium trioxide.
- ○ c. The name of $Cu_3N_2$ is copper(II) nitrite.
- ○ d. The name of $Fe_2O_3$ is iron(II) oxide.
- ○ e. The name of $Cr_2O_3$ is chromium(III) oxide.

Clear my choice

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Next page

**How can Mg acquire a noble gas electron configuration?**

Select one:

- ● a. By gaining two electrons
- ○ b. By losing two electrons
- ○ c. By losing one electron
- ○ d. By losing three electrons
- ○ o. By gaining one electron

Clear my choice

**Question 15**

Answer saved

Marked out of
2.00

⚑ Remove
flag

A student has a sample of 1.88 M HCl. What volume of water does he require to prepare 100 mL of 0.450 M HCl?

Select one:

- ● a. 23.9 mL

- ○ b. 4.79 mL

- ○ c. 52.1 mL

- ○ d. 76.1 mL

- ○ e. 47.9 mL

Clear my choice

**Question 16**

Answer saved

Marked out of 2.00

⚑ Remove flag

Which one of the following is **correct**:

Select one:

- ⦿ a. The name of $MnO_2$ is manganese(II) oxide.
- ○ b. The name of $CrO_3$ is chromium trioxide.
- ○ c. The name of $Cu_3N_2$ is copper(II) nitrite.
- ○ d. The name of $Fe_2O_3$ is iron(II) oxide.
- ○ e. The name of $Cr_2O_3$ is chromium(III) oxide.

Clear my choice

Previous page

An atom of which of the following elements is <u>not</u> diamagnetic in the ground state.

Select one:

○ a. Xe

○ b. Si

○ c. Ba

○ d. Hg

○ e. Zn

**Question 9**

Not yet answered

Marked out of 2.00

⚑ Flag question

The total number of atoms in 0.10 mol of $N_2O_4$ is:

Select one:

○ a. $6.0 \times 10^{22}$

○ b. $1.5 \times 10^{22}$

○ c. $1.5 \times 10^{-23}$

○ d. $3.6 \times 10^{23}$

○ e. $3.0 \times 10^{23}$

Next page

Previous page

What is the length of 1.85 decimeter in units of micrometer with the correct number of significant figures?

Select one:

○ a. $2 \times 10^{-6}$

○ b. $1.85 \times 10^{5}$

○ c. $1.85 \times 10^{5}$

○ d. $2 \times 10^{-9}$

○ e. $1.85 \times 10^{6}$

**Question 3**

Answer saved

Marked out of 2.00

⚑ Remove flag

Which of the following statements is **correct** for multi-electron atoms?

Select one:

○ a. The spin quantum number $(m_s)$ describes the direction of the spin of the electron.

○ b. The magnetic quantum number $(m_l)$ describes the shape of an orbital.

○ c. The principal quantum number $(n)$ describes the shape of an orbital and orientation of an orbital.

○ d. The angular momentum quantum number $(l)$ describes the orientation of an orbital.

● e. The principal quantum number $(n)$ describes the shape of an orbital.

How can Mg acquire a noble gas electron configuration?

Select one:

- ● a. By gaining two electrons
- ○ b. By losing two electrons
- ○ c. By losing one electron
- ○ d. By losing three electrons
- ○ o. By gaining one electron

Clear my choice

**Question 13**

Answer saved

Marked out of 2.00

⚑ Remove flag

How many electrons are there in the valence shell of Be in $BeCl_2$?

Select one:
- ○ a. 8
- ○ b. 10
- ○ c. 6
- ○ d. 4
- ● e. 2

Clear my choice

## Question 1

Answer saved

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The mass percent of hydrogen in $C_6H_{12}O_6$ is:

Select one:

- ○ a. 53
- ○ b. 69
- ○ c. 40
- ● d. 6.7
- ○ d. 26

Clear my choice

Answer saved

Marked out of
2.00

🚩 Remove
flag

The mass percent of hydrogen in $C_6H_{12}O_6$ is:

Select one:

○ a. 53

○ b. 69

○ c. 40

● d. 67

○ e. 26

Clear my choice

**Select one:**

○ a. S has +1, two O atoms has −1 and one O atom has 0

○ b. S has 0, one O atom has +1

○ c. S has +2, one O atom has −2

○ d. S has +2, two O atoms has −1 and one O atom has 0

○ e. S has +1, each O atom has 0

The mass percent of hydrogen in $C_6H_{12}O_6$ is:

Select one:
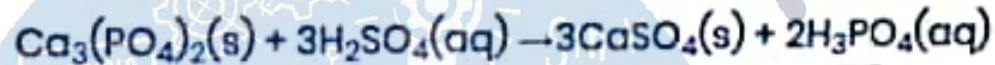
○ a. 53

○ b. 69

○ c. 40

○ d. 6.7

○ e. 26

When 12.0 g of $Ca_3(PO_4)_2$ and 12.0 g of $H_2SO_4$ were allowed to react according to the above equation, 6.00 g of $CaSO_4$ were produced. Calculate the % yield of $CaSO_4$. Molar masses (g/mol): $Ca_3(PO_4)_2 = 310.2$; $H_2SO_4 = 98.1$; $CaSO_4 = 136.1$ and $H_3PO_4 = 98.0$

$$Ca_3(PO_4)_2(s) + 3H_2SO_4(aq) \rightarrow 3CaSO_4(s) + 2H_3PO_4(aq)$$

Select one:

○ a. 88.6

○ b. 63.3

○ c. 76.0

○ d. 50.6

○ e. 38.0

Next page

The total number of atoms in 0.10 mol of $NO_2$ is:

Select one:

○ a. $2.0 \times 10^{22}$

○ b. $3.6 \times 10^{-23}$

○ c. $3.0 \times 10^{23}$

● d. $6.0 \times 10^{22}$

○ e. $1.8 \times 10^{23}$

<u>Clear my choice</u>

What is the length of 1.85 decimeter in units of micrometer with the correct number of significant figures?

Select one:

- a. $2 \times 10^{-6}$
- b. $1.85 \times 10^5$
- c. $1.85 \times 10^{-5}$
- d. $2 \times 10^{-9}$
- e. $1.85 \times 10^6$

Consider the underlined unbalanced chemical equation:

$$H_2SO_4\,(aq) + Fe(OH)_3(s) \rightarrow Fe_2(SO_4)_3(s) + H_2O(l)$$

A volume of 38.0 mL of aqueous $H_2SO_4$ solution was required to react completely with 0.685 g $Fe(OH)_3$ (molar mass = 106.8 g/mol) to produce $Fe_2(SO_4)_3$. Calculate the molar concentration of the $H_2SO_4$ solution.

Select one:

○ a. 0.214 M

○ b. 0.301 M

○ c. 0.344 M

○ d. 0.253 M

○ e. 0.175 M

## Question 2

Not yet answered

Marked out of 2.00

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**Which of the following ions has the smallest radius:**

Select one:

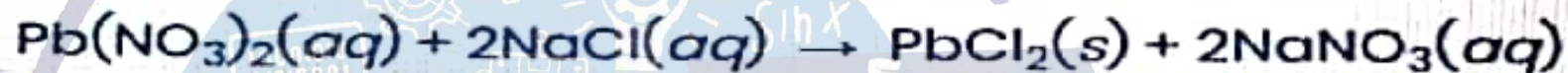○ a. $P^{3-}$

○ b. $N^{3-}$

⦿ c. $Mg^{2+}$

○ d. $O^{2-}$

○ e. $Na^{+}$

Clear my choice

When 13.8 mL of 0.870 $M$ lead(II) nitrate reacts with 90.0 mL of 0.777 $M$ sodium chloride, 0.279 kJ of heat is released at constant pressure. What is $\Delta H^{\circ}$ for this reaction?

$$Pb(NO_3)_2(aq) + 2NaCl(aq) \longrightarrow PbCl_2(s) + 2NaNO_3(aq)$$

Select one:

○ a. −23.3 kJ

○ b. −46.5 kJ

○ c. 23.3 kJ

○ d. 69.7 kJ

○ e. 46.5 kJ

Two elements that have the same ground-state valence shell configuration of $ns^2np^2$ are:

Select one:

○ a. Al and Ga.

● b. K and Mg.

○ c. Ge and Pb.

○ d. O and Se.

○ e. Mg and Ca.

Clear my choice

## Question 20

Answer saved

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What is the hybridization of the central atom in $OF_2$?

Select one:

- ○ a. $sp$
- ○ b. $sp^3d^2$
- ○ c. $sp^3d$
- ○ d. $sp^2$
- ⦿ e. $sp^3$

Clear my choice

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Next page

**Question 13**

Answer saved

Marked out of 2.00

⚑ Remove flag

How many electrons are there in the valence shell of Be in $BeCl_2$?

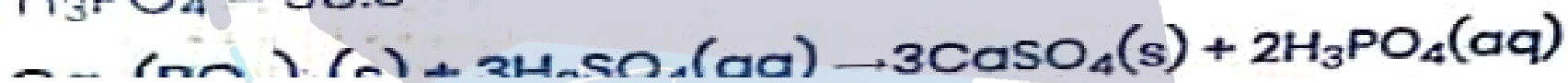Select one:

- ○ a. 8
- ○ b. 10
- ○ c. 6
- ○ d. 4
- ● e. 2

Clear my choice

**Select one:**

- ○ a. The spin quantum number ($m_s$) describes the direction of the spin of the electron.

- ○ b. The magnetic quantum number ($m_l$) describes the shape of an orbital.

- ○ c. The principal quantum number ($n$) describes the shape of an orbital and orientation of an orbital.

- ○ d. The angular momentum quantum number ($l$) describes the orientation of an orbital.

- ● e. The principal quantum number ($n$) describes the shape of an orbital.

Clear my choice

When 12.0 g of $Ca_3(PO_4)_2$ and 12.0 g of $H_2SO_4$ were allowed to react according to the above equation, 6.00 g of $CaSO_4$ were produced. Calculate the % yield of $CaSO_4$. Molar masses (g/mol): $Ca_3(PO_4)_2 = 310.2$; $H_2SO_4 = 98.1$; $CaSO_4 = 136.1$ and $H_3PO_4 = 98.0$

$$Ca_3(PO_4)_2(s) + 3H_2SO_4(aq) \rightarrow 3CaSO_4(s) + 2H_3PO_4(aq)$$

The bond angels in BF₃ are expected to be:

Select one:

○ a. 90° and 180°

○ b. 90° and 120°

○ c. 109.5°

○ d. 180°

◉ e. 120°

Clear my choice

## Question 19

Not yet answered

Marked out of 2.00

Remove flag

In which of the following bonds would P have a partial negative charge?

Select one:

- ○ a. P–Cl
- ○ b. P–S
- ○ c. P–N
- ○ d. P–O
- ● e. P–Si

Clear my choice

The correct electronic configuration of an element that has atomic number = 52 is:

Select one:

○ a. $[Kr]4d^{10}5p^6$

○ b. $[Ar]4d^{10}5s^25p^4$

□ c. $[Kr]5s^25p^4$

□ d. $[Ar]3d^{10}4s^24p^4$

□ e. $[Kr]4d^{10}5s^25p^4$

## Question 12

Answer saved

Marked out of 2.00

🚩 Remove flag

The molecular geometry of $PF_5$ is:

Select one:
- 🔵 a. Square pyramidal
- ○ b. Seesaw (distorted tetrahedral)
- ○ c. Trigonal pyramidal
- ○ d. Trigonal bipyramidal
- ○ e. T-shape

Clear my choice