Chapter 2

Atoms, Molecules and Ions

Exercises

A picture containing text

Description automatically generated  
1a  
Graphical user interface, text, application

Description automatically generated

1b

Graphical user interface, application, Teams

Description automatically generated

1c

Graphical user interface, application, Teams

Description automatically generated

1d

Graphical user interface, application

Description automatically generated

A picture containing chart

Description automatically generated

Chart

Description automatically generated

The red and green colored boxes correspond to metals (the red is magnesium which is an alkaline earth metal and the green is ruthenium). The yellow is a noble gas (helium) and the blue is oxygen and both of them are nonmetal elements.

Diagram

Description automatically generated

Graphical user interface, text, application, email

Description automatically generated

Chart, bubble chart

Description automatically generated

**Step 1**

1 of 2

Ionic compounds:

* formed by the elements of metal and non-metal
* there's a strong electrostatic attraction between them
* high melting and boiling points, therefore, at room temperature exist as solids

Molecular compounds:

* formed by the elements of non-metal
* weaker intermolecular attraction
* lower melting and boiling points, hence, at room temperature exist as gasses or liquids

**(Diagram (i))**

* atoms are closely packed and particles are arranged in order
* there is a strong intermolecular attraction
* the compound is in a solid state

Therefore, it represents \text{\color{#4257b2}ionic compound}ionic compound

**(Diagram (ii))**

* particles are spread apart
* there is a weak attraction between particles
* the compound is in a gaseous state

Therefore, it represents a \text{\color{#4257b2}molecular compound}molecular compound

Chart

Description automatically generated

Chart, histogram, box and whisker chart

Description automatically generated

Graphical user interface, application, Teams

Description automatically generated

Graphical user interface, application

Description automatically generated

Chart

Description automatically generated

Table

Description automatically generatedChart, diagram, pie chart

Description automatically generated

A screenshot of a computer

Description automatically generated with medium confidenceGraphical user interface, text, application, email

Description automatically generatedText

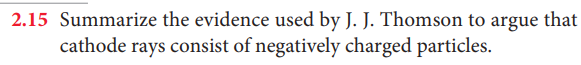
Description automatically generated

Text

Description automatically generated

Table

Description automatically generated



Text, letter

Description automatically generated

Text

Description automatically generated

Table

Description automatically generatedText, letter

Description automatically generated

Text

Description automatically generated

Text, letter

Description automatically generated

Text

Description automatically generated

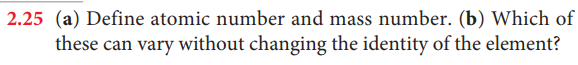
Text

Description automatically generated



Text

Description automatically generated



Text

Description automatically generated

Text

Description automatically generated

Text

Description automatically generated

Table

Description automatically generated

Table

Description automatically generated

Text

Description automatically generated

Text, letter

Description automatically generated

Text

Description automatically generated

Text

Description automatically generated

Text

Description automatically generated

Text, letter

Description automatically generated

Text

Description automatically generated

Text, letter

Description automatically generated

Table

Description automatically generated

Text

Description automatically generated  
  
  
  
  
  
  
  
  
  
  
  
  
Text

Description automatically generated

Text

Description automatically generated

Text

Description automatically generated

Text

Description automatically generated

Text

Description automatically generated

Text

Description automatically generated

Diagram, schematic

Description automatically generated

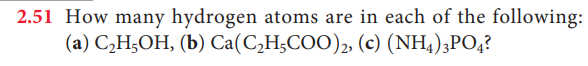


Text

Description automatically generated

A screenshot of a computer

Description automatically generated with medium confidence



Text

Description automatically generated

Chart, bubble chart

Description automatically generated

Chart, bubble chart

Description automatically generated

Table

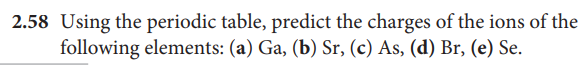
Description automatically generated

Table

Description automatically generated

Text

Description automatically generated



Text

Description automatically generated

Text

Description automatically generated

Text

Description automatically generated

Text

Description automatically generated

Table

Description automatically generated

Table

Description automatically generated

Text

Description automatically generated

Text

Description automatically generated

Graphical user interface, text

Description automatically generated

Text

Description automatically generated

Text

Description automatically generated

Text

Description automatically generated

Text, letter

Description automatically generated

Text, letter

Description automatically generated

Text, letter

Description automatically generated

Text

Description automatically generated

Text

Description automatically generated

Text

Description automatically generated

Text

Description automatically generated

Text

Description automatically generated

Text

Description automatically generated with medium confidence

Text

Description automatically generated

Text

Description automatically generated

Text

Description automatically generated

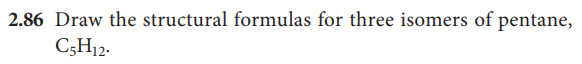
Text

Description automatically generated



Text

Description automatically generated



Table

Description automatically generated

Text

Description automatically generated

Text, letter

Description automatically generated

Diagram

Description automatically generated

Text

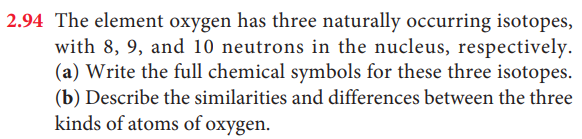
Description automatically generated

Text

Description automatically generated

Text

Description automatically generated



Text, letter

Description automatically generated

Text

Description automatically generated

Text, letter

Description automatically generated

Table

Description automatically generated

Text, letter

Description automatically generated

Text

Description automatically generatedText

Description automatically generated

Text, letter

Description automatically generated

Text

Description automatically generated

Chart, bubble chart

Description automatically generated

Text

Description automatically generated

Table

Description automatically generatedTable

Description automatically generated

Diagram

Description automatically generated

Text

Description automatically generated

Text, letter

Description automatically generated

Text, letter

Description automatically generated

Text, letter

Description automatically generated

Text

Description automatically generated

