Quiz 3A

1. The highest recorded temperature in the continental United States was 134.0 °F in Death Valley, California, on July 10, 1913 (8 points).
	1. Calculate the temperature in degrees Celsius.

$$℉=\frac{9}{5}℃+32⇒℃=\frac{5}{9}\left(℉-32\right)=\frac{5}{9}\left(134.0-32\right)=\frac{5}{9}\left(102.0\right)=56.67℃$$

* 1. Calculate the temperature in Kelvin.

$$K=℃+273.15=56.67+273.15=329.82 K$$

1. Using the energy values for food, determine the total kilocalories in one cup of clam chowder that contains 16 g of carbohydrates, 9 g of protein, and 12 g of fat (6 points).

|  |  |  |
| --- | --- | --- |
| Food Type | kJ/g | kcal /g |
| Carbohydrate | 17 | 4 |
| Fat | 38 | 9 |
| Protein | 17 | 4 |

$$16 g carb×\frac{4 kcal}{1 g carb}+9 g protein×\frac{4 kcal}{1 g protein}+12 g fat×\frac{9 kcal}{1 g fat}=208 kcal$$

1. Choose the names of two elements that are in the following groups (4 points).
	1. Halogens (bromine, sodium, neon, fluorine)
	2. Noble Gases (helium, argon, hydrogen, chlorine)
2. Does this week’s experiment involve the collection of data (2 points)?

No. Chemical nomenclature involves the naming of compounds.

Quiz 3B

1. Choose the names of two elements that are in the following groups (4 points).
	1. Alkali Metals (cesium, sodium, barium, calcium)
	2. Alkaline Earth Metals (lithium, potassium, barium, magnesium)
2. The highest recorded body temperature that a person has survived is 115.7 °F (8 points).
	1. Calculate the temperature in degrees Celsius.

$$℉=\frac{9}{5}℃+32⇒℃=\frac{5}{9}\left(℉-32\right)=\frac{5}{9}\left(115.7-32\right)=\frac{5}{9}\left(83.7\right)=46.5℃$$

* 1. Calculate the temperature in Kelvin.

$$K=℃+273.15=46.5+273.15=319.65 K=319.7 K$$

1. Does this week’s experiment involve the collection of data (2 points)?

No. Chemical nomenclature involves the naming of compounds.

1. Using the energy values for food, determine the total kilojoules in one cup of clam chowder that contains 16 g of carbohydrates, 9 g of protein, and 12 g of fat (6 points).

|  |  |  |
| --- | --- | --- |
| Food Type | kJ/g | kcal /g |
| Carbohydrate | 17 | 4 |
| Fat | 38 | 9 |
| Protein | 17 | 4 |

$$16 g carb×\frac{17 kJ}{1 g carb}+9 g protein×\frac{17 kJ}{1 g protein}+12 g fat×\frac{38 kJ}{1 g fat}=881 kJ$$