Chemistry 20: Stoichiometry

1. **Numerical response question**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |

Left justify your answer in the boxes provided

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Iron ore, (Fe2O3(s)) is smelted into iron metal by reacting it with coke (C(s)…. a type of coal, not a brand of pop)  2Fe2O3(s) + 3C(s) 🡪 4Fe(s) + 3CO2(g)  What mass of coke is required to produce 500 kg of iron metal?  Express the answer as a.bc x 10d grams. Fill in the values of a,b,c,d in the correct order using the boxes provided.   1. **Numerical response question**  |  |  |  |  | | --- | --- | --- | --- | |  |  |  |  |   Left justify your answer in the boxes provided |
| Balance the following reaction and determine the mass of magnesium carbonate (MgCO3(s)) needed to produce 100 g of antimony (V) carbonate (Sb2(CO3)5(s)). Express the answer as \_\_\_\_\_\_\_\_\_ g  \_\_\_\_\_Sb(s) + \_\_\_\_\_ MgCO3(s) 🡪 \_\_\_\_ Mg(s) + \_\_\_\_\_ Sb2(CO3)5(s)) |

1. **Numerical response question**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |

Left justify your answer in the boxes provided

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Aluminium oxide (Al2O3(s)) is formed from its elements. If 1.4 L of oxygen at STP is consumed, the mass of aluminium oxide formed will be \_\_\_\_\_\_ g.   1. **Numerical response question**  |  |  |  |  | | --- | --- | --- | --- | |  |  |  |  |   Left justify your answer in the boxes provided   |  | | --- | | A 10 g sample of aluminum foil is placed into 0.075 L of a 0.50  solution of copper (II) sulfate. The limiting reagent for this reaction is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  Enter 1 if it is the aluminium foil  Enter 2 if it is the copper (II) sulfate solution. | |

Solutions:

1. 8064
2. 77.6
3. 4.2
4. 2