

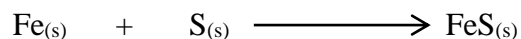
MINISTRY OF EDUCATION, HERITAGE AND ARTS
YEAR 13 CHEMISTRY
REVISION WORKSHEET 8

Write the answers to the following questions in your exercise/activity books.

Strand 3: Reactions

Sub-strand: Electrochemistry

1. At high temperatures, sulphur combines with iron to form iron(II) sulphide as shown in the equation below.



In an experiment, 7.60 g of iron is reacted with 8.67 g of sulphur.

- (i) Calculate the moles of iron and the moles of sulphur present. **(2 marks)**
 $(M_{\text{Fe}} = 56 \text{ g mol}^{-1}; M_{\text{S}} = 32 \text{ g mol}^{-1})$
 - (ii) Determine the limiting reagent. **(1 mark)**
 - (iii) Provide a reason for your answer to part (ii) above. **(2 marks)**
 - (iv) Determine the moles of sulphur that will react with iron. **(1 mark)**
 - (v) Calculate the mass of iron (II) sulphide formed. **(1 mark)**
2. For each of the features below, indicate whether it is for a **galvanic cell** or an **electrolytic cell**.

	Feature	Galvanic Cell or Electrolytic Cell
1.	Cathode is positive and anode is negative.	
2.	Cathode is negative and anode is positive.	
3.	Electrical energy is supplied through an external source.	
4.	Electrical energy is produced through a spontaneous reaction.	
5.	Converts chemical energy into electrical energy.	
6.	Converts electrical energy into chemical energy.	
7.	Reaction is spontaneous.	
8.	Reaction is non-spontaneous.	
9.	Requires a salt bridge to connect the two half cells	
10.	Two electrodes are placed in the same beaker	

(10 marks)

The End