



**GAUTENG PROVINCE**  
EDUCATION  
REPUBLIC OF SOUTH AFRICA

**GAUTENG DEPARTMENT OF EDUCATION  
PROVINCIAL EXAMINATION  
JUNE 2017  
GRADE 11**

**PHYSICAL SCIENCES  
PAPER 2**

**CHEMISTRY**

**TIME: 3 hours**

**MARKS: 150**

**14 pages + 2 data sheets**

# Gauteng Province Grade1physical Sciences Lesson Plans

**RD Boyd**



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l when the half reactions listed above are combined into a balanced chemical equation the ratio of the coefficients  $\text{Cu} + \text{MnO}_4^- + 4\text{H}^+ + 3\text{e}^-$  is

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web 1 practice problem balance the redox reaction in basic solution  $\text{NO}_2 + \text{aq} \rightarrow \text{NH}_3 + \text{aq}$  2 practice problem balance  
the following reduction oxidation reaction in basic solution what is the coefficient in front of  $\text{OH}^-$   $\text{Br}_2 + \text{l} \rightarrow \text{BrO}_3^- + \text{aq}$  previous

topic next topic

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web google classroom for the following redox equation  $\text{MnO}_4^- + \text{H}_2\text{SO}_3 \rightarrow \text{Mn}^{2+} + \text{HSO}_4^-$  what will be the stoichiometric coefficient of  $\text{H}_2\text{SO}_3$  if the above equation is balanced in an acidic medium stuck use a hint report a problem do 4 problems

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web balance this redox reaction by the half reaction method by assuming an acidic solution  $\text{Cr}_2\text{O}_7^{2-} + \text{Fe}^{3+} \rightarrow \text{Cr}^{3+} + \text{Fe}^{2+}$  balance the redox reaction in exercise 9 by the half reaction method by assuming a basic solution

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web solution 1 the two half reactions balanced as if in acidic solution  $2\text{CN}^- + \text{Au} + \text{CN}^- + 2\text{e}^- + 2\text{H}^+ + \text{O}_2 \rightarrow \text{H}_2\text{O}_2 + 2\text{CN}^-$  make electrons equal convert to basic solution  $4\text{CN}^- + 2\text{Au} + 2\text{CN}^- + 2\text{e}^-$  multiplied by a factor of 2  $2\text{e}^- + 2\text{H}_2\text{O} + \text{O}_2 \rightarrow \text{H}_2\text{O}_2 + 2\text{OH}^-$  the final answer

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web aug 29 2023 the first step to balance any redox reaction is to separate the reaction into half reactions the substance being reduced will have electrons as reactants and the oxidized substance will have electrons as products usually all reactions are written as reduction reactions in half reaction tables

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web the half equation method separates the oxidation and reduction of a redox reaction in half reactions overall scheme for the half reaction method step 1 split reaction into half reactions reduction and oxidation step 2 balance the charge or oxidation number with electrons step 3 balance c e o by adding c e h<sub>2</sub>o

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web when balancing equations for redox reactions occurring in basic solution it is often necessary to add  $\text{OH}^-$  ions or the  $\text{OH}^-$

$\text{H}_2\text{O}$  pair to fully balance the equation in this video we'll walk through this process for the reaction between  $\text{ClO}^-$  and  $\text{Cr}(\text{OH})_4^-$  in basic solution created by Jay

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web bonus problem here is a balanced net ionic equation  $3\text{Br}_2 + 6\text{OH}^- \rightarrow 3\text{Br}_2 + 3\text{H}_2\text{O}$  the above equation takes place in two stages first bromine reacts with  $\text{OH}^-$  ions to form bromide ions and  $\text{BrO}^-$  ions second the  $\text{BrO}^-$  ions react to form bromide ions and bromate  $\text{BrO}_3^-$  ions

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web we can balance it for charge by adding two electrons to the right side of the equation so that the net charge on each side is 0 oxidation  $\text{Ni} \rightarrow \text{Ni}^{2+} + 2\text{e}^-$  now that the oxidation half reaction is balanced it tells us that two electrons are produced for every atom of nickel oxidized but where do those electrons go

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web balance each half reaction in basic solution  $4\text{SO}_2 + 7\text{Cr}_2\text{O}_7^{2-} + 2\text{NO}_3^- \rightarrow 2\text{MnO}_2 + \text{Cr}_3\text{O}_3 + \text{SO}_2 + \text{Mn}_2\text{O}_3$  balance each redox reaction in acid solution using the half reaction method  $8\text{H}_2\text{O}_2 + \text{Cr}_2\text{O}_7^{2-} + 2\text{H}^+ \rightarrow 2\text{H}_2\text{O} + 2\text{Cr}^{3+} + 10\text{H}_2\text{O}$   $11\text{PbO}_2 + \text{IO}_3^- + 2\text{H}^+ \rightarrow \text{PbO}_2 + \text{IO}_3^- + \text{H}_2\text{SO}_4$

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web in the redox equation below that occurs in our stomach which of the following pairs identifies the reducing and oxidizing agents respectively c 6 h 8 o 6 2h<sup>+</sup> 2no 2 c 6 h 6 o 6 2h<sup>+</sup> 2 o 2no choose 1 answer c 6 h 8 o 6 and no 2 a c 6 h 8 o 6 and no 2 no 2 and c 6 h 8 o 6 b no 2 and c 6 h 8 o 6 h and no 2 c h and

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tuesday 1 pm 2 pm teaching assistant ta itai feigenbaum office hours friday after

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web introduction to mathematical programming operations research volume 1 by wayne l winston it will be useful to have this textbook pre requisites linear algebra and calculus both at the undergraduate level is a must proficiency in a computer programming language python or matlab is a plus but not necessary course objectives there are