Year 13 Science: Chemical processes in the world: from natural gas to urea

Name: _____ Date: _____

Try these without your notes first, then check the answer key.

Practice

1. Write the balanced equation for urea hydrolysing in the soil.

2. What happens to the equilibrium yield of ammonia if the pressure is increased, and why?

3. Overall, $CH_4 + 2H_2O \rightarrow CO_2 + 4H_2$ and $N_2 + 3H_2 \rightarrow 2NH_3$. What is the minimum mass of CO_2 released in making 1.00 tonne of NH_3?

4. If ocean pH fell from 8.1 to 7.8, by what factor would $[H_3O^+]$ increase?

5. Why does the Haber process use a catalyst, when it does not change the equilibrium yield?

Fix the mistake

6. Correct this statement: "The catalyst increases the yield of ammonia."

7. Correct this statement: "Plants use a high temperature because the Haber process needs heat."

8. Correct this statement: "Urea fertiliser releases nitrate, which harms the environment."

9. Correct this statement: "The report lists five problems with fertiliser, so it is an evaluation."