

Short answers to the exams: chemistry

Chemistry 1

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| 1. true sentences: 1, 3, 7, 9 | 4 P (false one 0.5 reduction) |
| 2. Ionic compounds: NaCl, CaO, MgCl ₂ FeO | 4 P |
| Covalent compounds: CO ₂ , O ₂ , Alcohol, wax | 4 P |
| 3. a) 4 electrons in the outer shell, distributed over 4 orbital, needs 4 more electrons to gain full outer shell, one for each of the 4 orbital⇒ makes four bonds | 4 P |
| b) 8 | 1 P |
| c) first shell 2 electrons, therefore full (1P), second shell 2 full orbital (0.5P) and 2 with one electron each. (0.5 P) | 2 P |
| 4. $\text{C}_3\text{H}_8 + 5 \text{O}_2 \xrightarrow{\text{Heat and light}} 3 \text{CO}_2 + 4 \text{H}_2\text{O}$ | 3P |
| Total | 22 P |

Chemistry 2 metals

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| 1. correct ones are: 1,3,5,8,9,12, | 6 |
| 2. a) Cu (metal), H ⁺ , Cl ⁻ , Cu ²⁺ , H ₂ O, (also H ₂ , OH ⁻ , H ₃ O ⁺) ⇒ 1 P each | 5 |
| b) $\text{Cu} + 2\text{H}^+ \longrightarrow \text{Cu}^{2+} + \text{H}_2$ | 2 |
| c) copper salt: CuCl ₂ | 2 |
| d) green | 1 |
| 3. the chemical reaction Mg + Oxygen to Mg oxide releases much more energy than the same reaction with copper (1). To perform the same chemical reaction but the other way round, we have to put in the same amount of energy (2). The reverse copper reaction needs less energy than the one of Mg, which means it is easier (requires less energy) to extract copper than mg (1) | 4 |
| total points | 20 |

Chemistry 3 about the water

There hasn't been time to create an exam...