

CHEMISTRY

BASIC CALCULATIONS

Total Marks: 25

Duration: 0 hours, 20 minutes

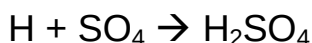
Instructions to test takers

1. Answer all the questions in this paper
2. All the answers for the questions in this paper will be found on **Study Star** (www.studystar.me)
3. Using the answers on the website, mark yourself truthfully and carefully.

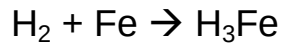
Turn this page, time yourself and begin the test

Section A [10 marks]

- Two elements X and Y were found to have valencies 2 and 3 respectively. What is the chemical formula for XY?
 - X_2Y_3
 - XY_{23}
 - X_3Y_2
- Using a periodic table, state the valence of nitrogen.
 - 2
 - 3
 - 4
- Write down the chemical formula of iron(iii)oxide.
 - Fe_3O_2
 - Fe_2O_3
 - $Fe(O_2)_3$
- Calculate the relative molecular mass of Magnesium oxide (MgO).
 - 40
 - 8
 - 20
- Calculate the relative molecular mass of Potassium Carbonate (K_2CO_3)
 - 99
 - 67
 - 138
- Balance the following chemical equation.



- $2H + SO_4 \rightarrow H_2SO_4$
 - $2H + 2SO_4 \rightarrow H_2SO_4$
 - $H + 2SO_4 \rightarrow H_2SO_4$
- Convert the following word equation into a chemical equation.
Iron(iii)sulphate + Calcium chloride $\rightarrow$ Iron(iii)chloride + calcium sulphate
 - $Fe_3(SO_4)_2 + CaCl_2 \rightarrow Fe_3Cl + CaSO_4$
 - $Fe_2(SO_4)_3 + CaCl_2 \rightarrow FeCl_3 + CaSO_4$
 - $Fe_3SO_4 + CaCl_2 \rightarrow Fe_3Cl + CaSO_4$
 - Convert the following chemical equation into a word equation.



- a. Hydrogen gas + Iron $\rightarrow$ ionic acid
 - b. Hydrogen + Iron $\rightarrow$ ionic acid
 - c. Hydrogen₂ + iron $\rightarrow$ Ionic acid
9. Write down the chemical formula of Hydrogen Sulphate.
- a. HSO_4
 - b. H_2SO_4
 - c. $\text{H}_2(\text{SO}_4)_2$
10. Balance $\text{CO} + \text{O}_2 \rightarrow \text{CO}_2$
- a. $2\text{CO} + \text{O}_2 \rightarrow \text{CO}_2$
 - b. $2\text{CO} + 3\text{O}_2 \rightarrow 2\text{CO}_2$
 - c. $2\text{CO} + \text{O}_2 \rightarrow 2\text{CO}_2$

Section B [5 marks]

11. What do we call the combining power of an element?
12. Positively charged ions are known as _____
13. Groups of atoms found in several compounds and are incapable of independent existence are called _____
14. Any charged atom is known as _____
15. Equations that contain ions are known as _____

Section C [10 marks]

16. Calculate the relative molecular mass of Iron(iii)sulphate. [2]
17. Balance $\text{CH}_4 + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$ [2]
18. Calculate the mass of magnesium needed to react with 96g of oxygen gas. [2]
19. Write down an ionic equation from
 $\text{Pb}(\text{NO}_3)_{2(\text{aq})} + 2\text{KCl}_{(\text{aq})} \rightarrow \text{PbCl}_{2(\text{s})} + 2\text{KNO}_{3(\text{aq})}$ [2]
20. Write down the chemical equation of calcium oxide. [2]



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