

IGCSE Chemistry

Name: _____ Score: _____

1. How many hydrogen atoms are in one molecule of H_2O ?

2. A balanced equation must have the same number of each atom on both sides because:
 - ☐ atoms are not created or destroyed
 - ☐ atoms disappear
 - ☐ mass is lost
 - ☐ energy is created
3. Using $\text{Ar}(\text{H})=1$ and $\text{Ar}(\text{O})=16$, what is the M_r of water (H_2O)?

4. How many moles are in 36 g of water ($M_r = 18$)?

5. What volume (dm^3) does 3 moles of a gas occupy at rtp ($1 \text{ mole} = 24 \text{ dm}^3$)?

6. How many moles are in 4 g of hydrogen gas ($M_r = 2$)?

7. To balance an equation you change the:
 - ☐ big numbers in front of formulae
 - ☐ subscripts inside formulae
 - ☐ names of the elements
 - ☐ arrow direction
8. In $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$, the mole ratio of H_2 to H_2O is:
 - ☐ 2 : 2 (i.e. 1 : 1)
 - ☐ 1 : 2
 - ☐ 2 : 1
 - ☐ 1 : 0
9. Atoms combine in fixed ratios because of their:
 - ☐ combining power (valency)

- ☐ colour
- ☐ temperature
- ☐ mass number

10. In an equation, the substances on the left of the arrow are the:

- ☐ reactants
- ☐ products
- ☐ catalysts
- ☐ solvents

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1. **2**

The subscript 2 means two hydrogen atoms.

2. **atoms are not created or destroyed**

Conservation of mass: atoms are only rearranged.

3. **18**

$$(2 \times 1) + 16 = 18.$$

4. **2**

$$\text{moles} = 36 \div 18 = 2.$$

5. **72**

$$\text{volume} = 3 \times 24 = 72 \text{ dm}^3.$$

6. **2**

$$\text{moles} = 4 \div 2 = 2.$$

7. **big numbers in front of formulae**

Only coefficients may be changed, not subscripts.

8. **2 : 2 (i.e. 1 : 1)**

2 moles of H_2 give 2 moles of water.

9. **combining power (valency)**

Valency sets how many bonds an atom forms.

10. **reactants**

Reactants $\rightarrow$ products.