

CHOONG HAN JUN (COPYRIGHTED) ©

MODELS: Atoms & Molecules

CHAPTER ANALYSIS



5 KEY CONCEPTS

- Describe an atom as an electrically neutral entity made up of a positively charged nucleus (protons and neutrons) with negatively charged electrons moving around the nucleus
- Compare the relative size of an atom to other objects
- Show an awareness that atoms of an element have a unique number of protons
- Recognise that atoms have mass that is contributed by the mass of the nucleus
- Show an understanding that a molecule is a group of two or more atoms chemically combined together

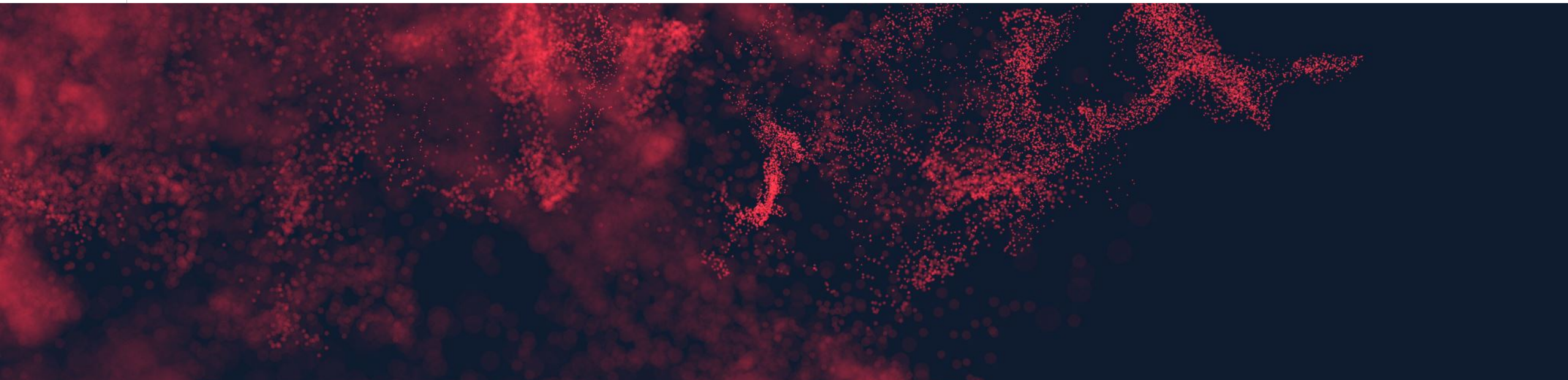


2 ADVANCED CONCEPTS

- Compare atoms and molecules
- State the number and types of atoms, given the chemical formula of a compound

KEY CONCEPT

ATOMS & MOLECULES



ATOMS & MOLECULES

ATOMS

Definition: An atom is the smallest unit of an element

Representation of atoms

Small
spheres



Hydrogen

Symbol

Hydrogen **H**

Circles (w
symbol)



MOLECULES

Definition: A molecule is a group of two or more atoms chemically joined together

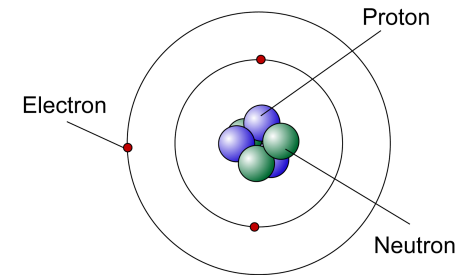
Representation of molecules

We use the *chemical formula* of molecules instead of just symbols

- The *chemical formula* of a molecule shows the number and types of atoms contained in it

Non-metal element	Compound
Chemical formula for a molecule of chlorine is Cl_2 <div style="text-align: center;">Cl_2</div> <ul style="list-style-type: none"> Cl is the symbol of a chlorine atom 2 tells us that there are 2 chlorine atoms in a chlorine molecule 	Chemical formula for a molecule of water is H_2O <div style="text-align: center;">H_2O</div> <ul style="list-style-type: none"> Water is made up of H (hydrogen) and O (oxygen) 2 tells us that there are 2 hydrogen atoms in a water molecule

MODEL OF AN ATOM



The nucleus of an atom contains **protons & neutrons** (equal number)

Proton

- Positive charge
- Relative mass: 1

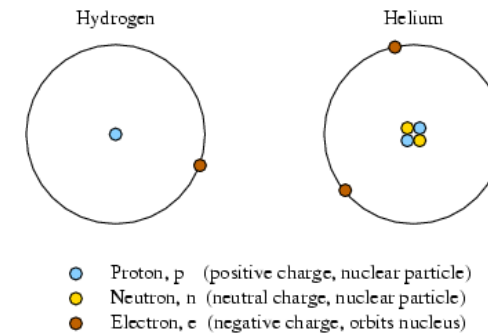
Neutron

- Same mass as proton
- No charge (neutral)

Electron

- Negative charge
- Relative mass: 1/1836 of proton/neutron mass

Differences between atoms



Proton (atomic) number

The proton number of an element refers to the **number of protons that atom has**.

COMPOSITION OF ATOMS

For more notes & learning materials, visit:
www.overmugged.com

Sec 1 EOY Exam crash course program

Professionally designed crash course to help you get a **condensed revision** before your EOY exams!

The **3 hour session** focuses on going through **key concepts** and **identifying commonly tested questions!**

Our **specialist tutors** will also impart valuable **exam pointers and tips** to help you maximise your preparation and ace your upcoming national exam!

The crash courses will begin in **June 2021** and last till **Oct 2021**.

Pre-register now on our [website](http://www.overmugged.com) and secure your slots!



IG handle:
[@overmugged](https://www.instagram.com/overmugged)



Join our telegram
channel:
[@overmugged](https://t.me/overmugged)



Need help?

Choong Han Jun

97839558
(Whatsapp)

@hanjunn
(telegram username)

