

# SUBJECT: SCIENCE

## Contents:

### **Unit 1. Photosynthesis and the carbon cycle**

- ✓ 1.1. Photosynthesis (p.8-14)
- ✓ 1.2. More about photosynthesis (p.15-23)
- ✓ 1.3. The carbon cycle (p.24-33)
- ✓ 1.4. Climate change (p.34-44)

### **Unit 2. Magnetism**

- ✓ 2.1. Atomic structure and the Periodic Table (p.48-52)
- ✓ 2.2. Trends in groups within the Periodic Table (p.53-59)
- ✓ 2.3. Why elements react to form compounds (p.60-70)
- ✓ 2.4. Simple and giant structures (p.71-81)

**Instructions: Students MUST complete the study guide before revision classes.**

## **PART 1. SCIENTIFIC TERMS**

<b>NO.</b>	<b>TERMS</b>	<b>UNITS</b>	<b>DEFINITIONS</b>	<b>VIETNAMESE TRANSLATIONS</b>
1	photosynthesis	1.1		
2	chlorophyll	1.1		
3	light intensity	1.1		
4	fertiliser	1.2		
5	stomata	1.2		
6	yield	1.2		
7	carbon cycle	1.3		
8	slush	1.4		
9	mass extinction	1.4		
10	meteorite	1.4		
11	meteoroid	1.4		
12	meteor	1.4		

13	<b>atomic number</b>	2.1		
14	<b>electron shell</b>	2.1		
15	<b>electronic structure</b>	2.1		
16	<b>electrostatic force</b>	2.1		
17	<b>energy level</b>	2.1		
18	<b>mass number</b>	2.1		
19	<b>Periodic Table</b>	2.1		
20	<b>alkali metal</b>	2.2		
21	<b>halogen</b>	2.2		
22	<b>noble gas</b>	2.2		
23	<b>chemical bond</b>	2.3		
24	<b>covalent bond</b>	2.3		
25	<b>dot and cross diagram</b>	2.3		
26	<b>ion</b>	2.3		
27	<b>highest energy level</b>	2.3		
28	<b>ionic bond</b>	2.3		
29	<b>ionic compounds</b>	2.3		
30	<b>molecule</b>	2.3		
31	<b>stable</b>	2.3		

32	outermost electron shell	2.3		
33	graphite	2.4		
34	intermolecular force	2.4		
35	lattice	2.4		
36	layer	2.4		
37	macromolecule	2.4		

## PART 2. EXERCISES

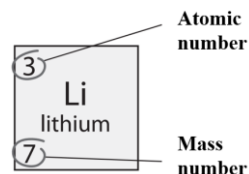
**Exercise 1.** Complete the table below.

Substance	Melting point in °C	Boiling point in °C	Electrical conductivity	Type of chemical bond	Why?
sodium chloride	801	1413	Yes - when it melts		
methane	-182	-161	No		
ammonia	-77	-34	No		
calcium oxide	2613	2850	Yes - when it melts		

**Exercise 2.** Complete the table below.

### Formulae

Atomic number = Number of protons = Number of electrons  
 Number of neutrons = Mass number – Atomic number



Element	Atomic number	Mass number	Number of protons	Number of neutrons	Number of electrons	Electronic structure	Alkali metal, halogen, or noble gas?
helium	2	4					
lithium	3			4			
neon		20				2, 8	
sodium				12	11		
chlorine		35	17				

**Exercise 3.** Draw dot and cross diagrams to illustrate atomic and ionic structures of the following elements and compounds.

Element	Atomic number	Compound
Mg	12	MgO
O	8	

1. The atomic diagram of magnesium

2. The atomic diagram of oxygen

3. The ionic structure of magnesium oxide