

SUBJECT: SCIENCE

Contents:

Unit 1. Photosynthesis and the carbon cycle (p.8-47)

- ✓ 1.1. Photosynthesis
- ✓ 1.2. More about photosynthesis

Unit 2. Properties of materials (p.48-83)

- ✓ Atomic structure and the Periodic Table
- ✓ Trends in groups within the Periodic Table
- ✓ Why elements react to form compounds
- ✓ Simple and giant structures

Unit 4. Maintaining life (p.142-158)

- ✓ 4.1. Plants and water
- ✓ 4.2. Transpiration
- ✓ 4.3. Excretion in humans

Instructions:

- 1) Students **MUST** complete the study guide before revision classes.
- 2) Students are **ALLOWED** to use calculators for problem-solving tasks.

PART 1. SCIENTIFIC TERMS

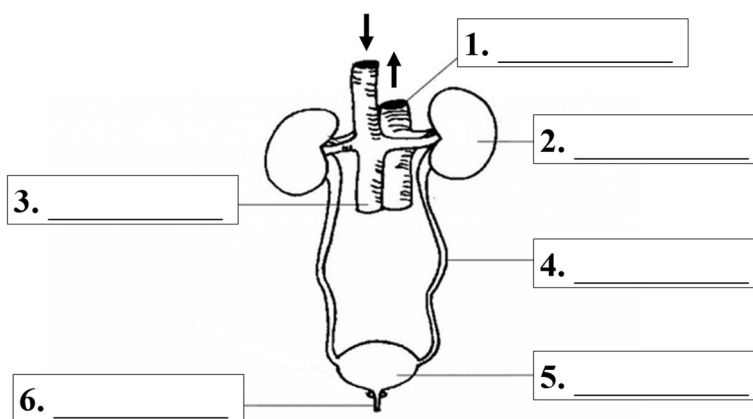
NO.	TERMS	UNITS	DEFINITIONS	VIETNAMESE TRANSLATIONS
1	photosynthesis	1		
2	stomata	1		
3	atomic number	2.1		
4	mass number	2.1		
5	electron shells	2.1		
6	electrostatic forces	2.1		
7	alkali metals	2.2		
8	halogens	2.2		
9	noble gases	2.2		
10	stable	2.3		
11	molecule	2.3		
12	ionic bond	2.3		
13	covalent bond	2.3		
14	melting point	2.4		
15	boiling point	2.4		
16	conduct electricity	2.4		
17	root hairs	4.1		
18	xylem vessels	4.2		
19	absorb	4.2		
20	transpiration	4.2		
21	wilted	4.2		
22	excretion	4.3		

NO.	TERMS	UNITS	DEFINITIONS	VIETNAMESE TRANSLATIONS
23	kidney	4.3		
24	ureter	4.3		
25	bladder	4.3		
26	urethra	4.3		

PART 2. EXERCISES

Exercise 1. Label the diagram of the excretory system using the terms given in the box.

<i>urethra</i>	<i>kidney</i>	<i>vein</i>
<i>ureter</i>	<i>artery</i>	<i>bladder</i>



Exercise 2. 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	

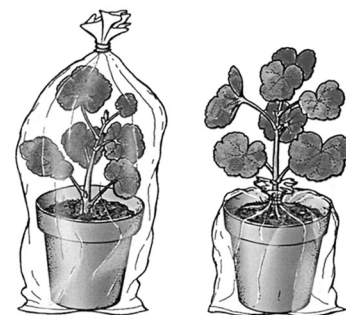
1. The atomic diagram of magnesium

2. The atomic diagram of oxygen

3. The ionic structure of magnesium oxide

Exercise 3. Analyse and interpret the following experiment.

In this experiment, both plants are grown in a pot under the same conditions. Plant A is fully covered with a plastic bag, while only the pot of Plant B is covered.



Plant A

Plant B

1. What was the variable that you changed in this experiment?
2. What variables did you keep the same?
3. Which plant lost mass faster? Why?

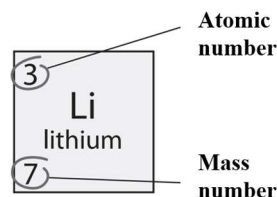
Exercise 4. Complete the table below.

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 5. 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	7					
neon	10	20					
sodium	11	23					
chlorine	17	35					