

8.5 Noble gases

Name: _____ Class: _____ Date: _____

Total: 6 marks

KEY WORDS monatomic 单原子 • unreactive 不活泼 • noble gases 稀有气体 • ions 离子
• periodic table 周期表

Objective

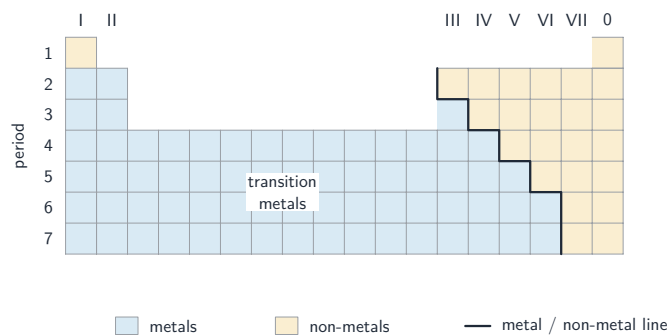
Build the skills to answer exam questions on **Group VIII — the noble gases** 稀有气体 — why they are unreactive.

You must be able to:

- describe the noble gases (monatomic, unreactive)
- explain their lack of reactivity using electron shells

1 Worked examples

■ Why noble gases are unreactive



The noble gases are in Group VIII (0) on the far right

- they are **monatomic** (single atoms) and **unreactive**.
- they have a **full outer shell**, so they don't need to gain, lose or share electrons.

2 Practice

2.1 State why the noble gases are described as monatomic. [1]

2.2 State the position of the noble gases in the Periodic Table. [1]

3 Exam-style questions

3.1 The noble gases are unreactive because they have: [1]

- | | |
|---|---|
| A | B |
| C | D |
- A** one outer electron
B seven outer electrons
C a full outer shell of electrons
D no electrons

3.2 Argon is a noble gas.

(a) Explain, using electrons, why argon does not form compounds easily. [2]

(b) State whether argon exists as single atoms or as molecules. [1]