

3.2 Oxides, Group 1 & Group 17

Question Paper

Course	DPIB Chemistry
Section	3. Periodicity
Topic	3.2 Oxides, Group 1 & Group 17
Difficulty	Medium

Time allowed: 20
Score: /10
Percentage: /100

Question 1

Which statement correctly describes the trend in metallic radius in group I elements Na to Rb?

- I. Increases moving down the group
- II. Increases moving down due to the addition of electron shells
- III. Decreases moving down due to increasing nuclear forces

- A. I and II only
- B. I and III only
- C. II and III only
- D. I, II and III

[1 mark]

Question 2

The Period 4 elements gallium (Ga), germanium (Ge), arsenic (As) and selenium (Se) are the elements directly below aluminium, silicon, phosphorus and sulfur in the Periodic Table.

The properties of each Period 4 element resemble those of the Period 3 element directly above it.

Which period 4 elements form oxides that dissolve in water to give an acidic solution?

- A. Ga and Ge
- B. Ge and Se
- C. As and Se
- D. Se only

[1 mark]

Question 3

Non-metallic elements in the **p** block can have the following two properties:

property 1 atoms with **no** paired electrons in 3p

property 2 have an oxide that can form a strong acid in water

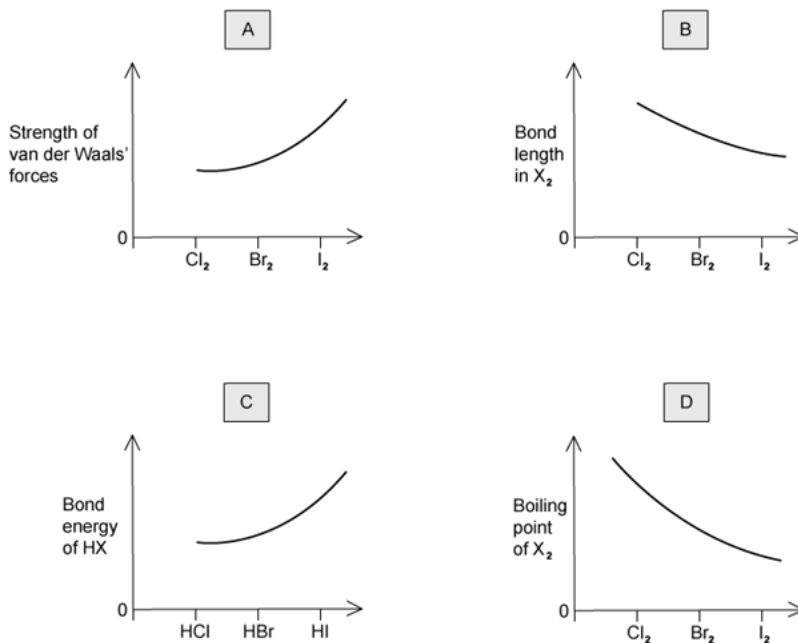
Which properties do phosphorus and sulfur have?

	sulfur	phosphorus
A	2 only	1 and 2
B	1 and 2	2 only
C	1 and 2	1 and 2
D	2 only	1 only

[1 mark]

Question 4

Which graph correctly illustrates a trend found in the halogen group?



[1 mark]

Question 5

Which of the following statements is true as you move down group 1?

- A. The first ionisation energy increases
- B. The atomic radius increases
- C. The melting point increases
- D. The reaction with water becomes less vigorous

[1 mark]

Question 6

Which statement is **not** correct?

- A. Caesium has a lower first ionisation energy than rubidium
- B. Rubidium reacts less violently with water than potassium
- C. Potassium has a larger atomic radius than sodium
- D. Sodium melts at a higher temperature than caesium

[1 mark]

Question 7

When a student dissolved the oxides of calcium and tellurium in water, the resulting solutions were tested with litmus paper. It would be seen that:

- A. Calcium turns litmus paper blue, but tellurium turns litmus paper red
- B. Calcium and tellurium both turn litmus paper red
- C. Calcium turns litmus paper red, but tellurium turns litmus paper blue
- D. Calcium and tellurium both turn litmus paper blue

[1 mark]

Question 8

Which of the following statements about strontium oxide and lithium oxide are true?

- I. Strontium oxide has $\text{pH} > 7$
- II. Lithium oxide is basic
- III. A solution containing both oxides would turn universal indicator red

- A. I and II only
- B. I and III only
- C. II and III only
- D. I, II and III

[1 mark]

Question 9

Which statements are correct?

- I. Fluorine will react with potassium chloride solution to produce chlorine.
- II. Iodine will react with sodium chloride solution to produce chlorine.
- III. Bromine will react with lithium iodide solution to produce iodine.

- A. I and II only
- B. I and III only
- C. II and III only
- D. I, II and III

[1 mark]

Question 10

Which is a characteristic property of sodium oxide?

- A. It turns moist litmus paper blue
- B. It turns moist litmus paper red
- C. When it dissolves in distilled water it forms a solution with pH less than 7
- D. It reacts with magnesium metal

[1 mark]