

1

The elements in Group 1 of the periodic table are metals.

(a) The elements in Group 1 are called the alkali metals.

Why are they called the alkali metals?

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(2)

(b) Explain the increase in reactivity of elements further down the group.

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(4)

(c) Lithium oxide is an ionic compound.

Draw a dot and cross diagram to show how lithium and oxygen combine to form lithium oxide.

Only show the electrons in the outer shell of each atom.

Give the charges on the ions formed.

(4)
(Total 10 marks)

Mark schemes

1

(a) because they form hydroxides

1

that give alkaline solutions (in water)

1

(b) the atoms have more electron shells (as move down the group)

1

so the electron in the outer shell is further away from the nucleus

1

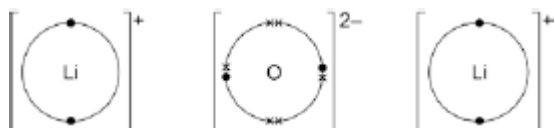
which reduces the attraction to the nucleus

1

so the electron is lost more easily from the atom

1

(c)



electronic structure of lithium drawn correctly

1

electronic structure of oxygen drawn correctly

1

correct charge on ions (Li⁺ and O²⁻)

1

correct number of each ion (2 lithium, 1 oxygen)

1

[10]