

Atoms, Elements and Compounds – 2019 Nov IGCSE

1. 0620/43/O/N/19/No.1

(a) Atoms are made of smaller particles called electrons, neutrons and protons.

Complete the table.

particle	relative charge	relative mass
electron		$\frac{1}{1840}$
neutron		
proton	+1	

[2]

(b) The table gives information about atoms and ions **A**, **B** and **C**.

Complete the table.

	number of electrons	number of neutrons	number of protons	symbol
A		14	13	${}_{13}^{27}\text{Al}$
B			12	${}_{12}^{25}\text{Mg}^{2+}$
C	10	10	9	

[6]

[Total: 8]

The table shows the melting points, boiling points and electrical conductivities of six substances **D, E, F, G, H** and **I**.

substance	melting point /°C	boiling point /°C	electrical conductivity when solid	electrical conductivity when liquid
D	1610	2230	non-conductor	non-conductor
E	801	1413	non-conductor	good conductor
F	-119	43	non-conductor	non-conductor
G	1535	2750	good conductor	good conductor
H	114	184	non-conductor	non-conductor
I	-210	-196	non-conductor	non-conductor

Choose substances from the table which match the following descriptions. Each substance may be used once, more than once or not at all.

(a) Which substance is a liquid at 25°C? [1]

(b) Which substance is a gas at 25°C? [1]

(c) Which **three** substances contain simple molecules?
..... [3]

(d) Which substance could be a metal? Give a reason for your answer.
substance
reason
..... [2]

(e) Which substance has a macromolecular structure? Give **two** reasons for your answer.
substance
reason 1
reason 2 [3]

(f) Which substance is an ionic solid? Give **one** reason for your answer.
substance
reason
..... [2]

[Total: 12]