

CHEMISTRY

PAPER 2CR

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1- (4CH0-S 2015-Paper 2CR-Q1)-ATOMIC STRUCTURE

An atom of an element has an atomic number of 6 and a mass number of 12.

- (a) Using this information, complete the table to show the numbers of protons, neutrons and electrons in one atom of this element.

(2)

number of protons	
number of neutrons	
number of electrons	

- (b) The Periodic Table shows the positions of five elements, J, Q, T, X and Z.

The letters do **not** represent the symbols for the elements.

Period	1	2	Group										3	4	5	6	7	0	
1																			
2	J																		Q
3	T																		
4														X		Z			
5																			
6																			

- (i) How many electrons are there in the outer shell of an atom of X?

(1)

.....

- (ii) There are 31 protons in an atom of X.

Using this information, explain how many protons there are in an atom of Z.

(2)

.....

.....

.....

.....

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1 - (4CH0-S 2015-Paper 2CR-Q1)-ATOMIC STRUCTURE

(iii) What is the electronic configuration of an atom of Q?

(1)

.....

(iv) State one similarity and one difference between the electronic configurations of atoms of J and T.

(2)

similarity

difference

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2- (4CH0-S 2014-Paper 2CR-Q1)-ATOMIC STRUCTURE

Neon is an element with atomic number 10.

(a) Which sub-atomic particles are present in the nucleus of a neon atom?

(1)

- A** electrons and neutrons
- B** electrons and protons
- C** electrons and neutrons and protons
- D** neutrons and protons

(b) Use words from the box to complete the sentences about the particles in a neon atom.

Each word may be used once, more than once or not at all.

(3)

electrons	neutrons	nuclei	protons
-----------	----------	--------	---------

The particles with the smallest mass are

An atom of neon has no overall charge because it contains equal numbers

of and

The chemical properties of neon depend on the number of

..... in the outer shell.

(c) What is the electronic configuration of a neon atom?

(1)

- A** 2.8
- B** 2.2.6
- C** 2.8.8
- D** 2.8.8.2

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2- (4CH0-S 2014-Paper 2CR-Q1)-ATOMIC STRUCTURE

(d) Neon has two main isotopes that can be represented as ^{20}Ne and ^{22}Ne .

(i) Explain, with reference to sub-atomic particles, what is meant by the term **isotopes**.
(2)

.....

.....

.....

.....

(ii) The relative atomic mass of neon is 20.2

How does this information support the fact that a sample of neon contains more ^{20}Ne than ^{22}Ne ?

(1)

.....

.....

(e) Neon belongs to the family of noble gases and is inert.

(i) What is meant by the term **inert**?

(1)

.....

.....

(ii) Why are noble gases inert?

(1)

.....

.....

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