SMART EXAM RESOURCES

9701 CAMBRIDGE AS CHEMISTRY
TOPIC QUESTIONS AND MARK SCHEMES
TOPIC :ATOMIC STRUCTURE
TOPIC: IONISATION ENERGY -BASICS
SET-1-QP-MS

1 The electronic configuration of a sulfur atom is $1s^2 2s^2 2p^6 3s^2 3p^4$.

(i) Identify which orbital in a sulfur atom has the lowest energy.

..... [1]

MARK SCHEME:

)	1s	1

2 Calcium, magnesium and radium are Group 2 elements. Radium follows the same trends as the other members of Group 2.

(a) Identify the highest energy orbital which contains electrons in a calcium atom. Sketch the shape of this orbital.

identity of highest energy orbital in Ca .....

shape

[1]

MARK SCHEME:

	Identify and draw the shape of highest energy orbital of Ca 4s AND 	**1**

3 Tellurium is an element in Group 16. The most common isotope of tellurium is ^{130}Te. Its electronic configuration is [Kr] $4d^{10}\ 5s^2\ 5p^4$.

(a) Complete Table 1.1.

Table 1.1

	nucleon number	number of neutrons	number of electrons
^{130}Te			

[3]

(b) Identify the sub-shell in an atom of Te that contains electrons with the lowest energy.

..... [1]

MARK SCHEME:

(a)		3

	nucleon number	number of neutrons	number of electrons
Tellurium-130	130	78	52

(b)	1 s	1