

SMART EXAM RESOURCES
9701 CAMBRIDGE AS CHEMISTRY
TOPIC QUESTIONS AND MARK SCHEMES
TOPIC :ATOMIC STRUCTURE
SUB-TOPIC: ELECTRONIC CONFIGURATION
SET-4-QP-MS

1 State the full electronic configuration of Cu^{2+} .

..... [1]

MARK SCHEME:

2

$1s^2 2s^2 2p^6 3s^2 3p^6 3d^0(4s^0)$	1
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2

State the electronic configuration of these two ions.

Li⁺ H⁻ [1]

MARK SCHEME:

4

Li ⁺ is 1s ²	H ⁻ is 1s ²	1
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3 State the full electronic configuration of an atom of potassium.

..... [1]

MARK SCHEME:

6

$1s^2 2s^2 2p^6 3s^2 3p^6 4s^1$	1
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4 P^{3-} , S^{2-} and Cl^{-} have the same number of electrons.

(i) Give the full electronic configuration of P^{3-} .

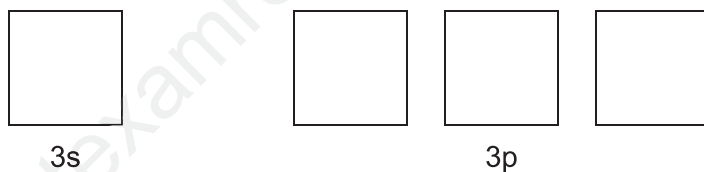
..... [1]

MARK SCHEME:

8

$1s^2 2s^2 2p^6 3s^2 3p^6$	1
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- 5** (i) Complete the diagram to show the arrangement of electrons within the third shell of a phosphorus atom.



[1]

- (ii) Explain why the first ionisation energy of sulfur is less than that of phosphorus.

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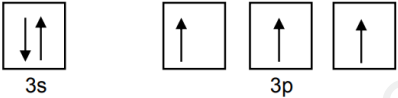
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..... [2]

MARK SCHEME:

10

(i)	 <p>3s 3p</p>	1
(ii)	<p>M1 (in S, the electron is removed from the) 2 electrons in (3)p orbital OR a pair of electrons in (3)p (orbital / sub-shell)</p> <p>M2 (paired electrons) repel</p>	2