

**Tutorial**

**Question 12.** The table below shows the elements **A** and **B** with their respective proton numbers.

Element	Proton Number
<b>A</b>	15
<b>B</b>	23

- (a) Write the electronic configuration for elements **A** and **B**.

**A:** 1s  2s  2p  3s  3p

**B:** 1s  2s  2p  3s  3p  4s  3d

- (b) State the number of unpaired electrons for elements **A** and **B**.

**A:**

**B:**

- (c) State the number of valence e for A and B elements

**A:**

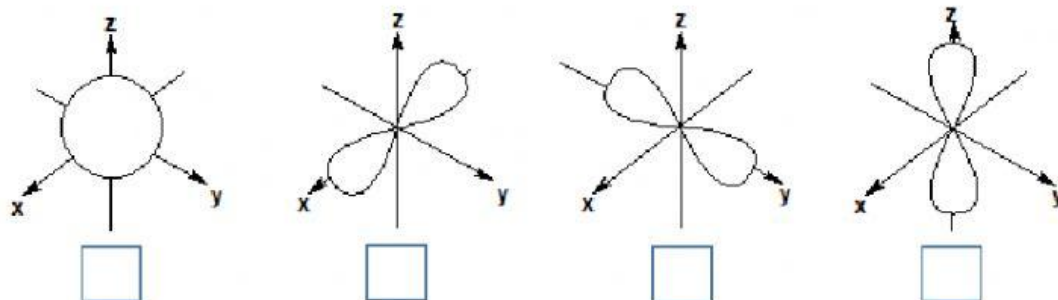
**B:**

- (d) If A becomes ion, state the charge of the ion **A**

If B becomes ion, state the charge of the ion **B**

A is a non-metal from group 15, while B is Transition metal

(e) Label the shapes of the valence orbitals in element A



(d) Give sets of the four quantum numbers for each of the valence electrons in element **A**.

Valence e	n	l	m	s
1st		1		
2nd		1		
3rd		1		
4th		0		
5th		0		